Slutrapport
til arbejdsmiljøforskningsfonden

Ph.d. projekt: Kollektiv stress

Forord

Denne slutrapport præsenterer resultaterne fra ph.d. projektet 'Kollektiv Stress', som er forløbet over perioden 2009-2014. Baggrunden for den forlængede periode er to barselsperioder.

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Indholdsfortegnelse

Om rapporten

Rapporten bygger på resultater fra et ph.d. projekt, hvor 2 artikler er accepteret i internationale, videnskabelige tidsskrifter og afventer publikation, 1 artikel er indsendt til bedømmelse i et internationalt, videnskabeligt tidsskrift og et bog kapitel er blevet udgivet.

Formålet med projektet var at belyse kollektive stressprocesser på arbejdet ved hjælp et mixed methods studie på to afdelinger i en større dansk virksomhed.
Helt konkret var formålet med projektet at undersøge:

- I hvilket omfang der forekommer kollektive stressprocesser på arbejdspladser.
- Hvilke arbejdsmæssige faktorer og sociale interaktionsformer der er medvirkende til dannelsen af kollektive stressprocesser.
- Hvilke arbejdsmæssige faktorer og sociale interaktionsformer der er medvirkende til kollektive positive forholdemåder til arbejdsmiljøet.

Der er således tale om en undersøgelse af både forekomsten af kollektiv stress og processerne bag.

Rapporten er inddelt i 7 kapitler. Efter denne læsevejledning sammenfattes i kapitel 1 projektets samlede produktion. Kapitel 2 indeholder et dansk og engelsk resume. I kapitel 3 sammenfattes projektets overordnede formål, metode og udførelse. I kapitel 4 beskrives om og hvordan projektets formål og hensigt er blevet opnået. Det beskrives specielt, hvorledes de begreber, der var beskrevet og dannede udgangspunkt for projektet i projektbeskrivelsen blev skrinlagt og i stedet blev en del af projektet en teoretisk nyudvikling af begreber som en af artiklerne i afhandlingen beskriver nærmere.
Kap 5 præsenterer resultaterne med udgangspunkt i de formulerede forskningsspørgsmål fra projektbeskrivelsen. Forskningsspørgsmålene behandles på tværs af artiklerne, således at hver artikel ikke behandler hver sit forskningsspørgsmål.
Afsnit 5.1 rapporterer forekomsten af kollektive stressprocesser på arbejdspladsen, hvor både signifikante formelle (faggruppe) og uformelle (sociale) gruppeforskelle i stress og coping bliver fremlagt med udgangspunkt i både kvalitative og kvantitative data. Gennem kvalitative analyser

fokuseres der på de sociale interaktionsformer og ledelsesmæssige karakteristika, der er medvirkende til dannelsen af kollektive stressprocesser.

Afsnit 5.2 rapporterer de kvalitative resultater fra studiet og fokuserer på de organisatoriske faktorer og sociale interaktionsformer som fremmer og hæmmer bestemte kollektive måder at evaluere arbejdsmiljøet på og cope med stress på.

Afsnit 5.3 rapporterer de kvalitative resultater som fokuserer på de organisatoriske og sociale interaktionsformer som fremmer og hæmmer kollektive konstruktive processer.

Kapitel 6 fokuserer på en teoretisk udvikling af begreberne distribueret appraisal og coping på baggrund af de empiriske resultater.

Kapitel 7 perspektiverer, hvordan projektets resultater på kort og lang sigt kan bidrage til at forbedre arbejdsmiljøet.

I kapitel 5 er resultaterne gengivet i form af korte (1-2) sider. De bagvedliggende accepterede artikler findes i rapportens bilag 1. En artikel er endnu under review og den kan findes i linket til afhandlingen i kapitel 1.

1. Sammenfatning af projektets produktion

Den samlede produktion fra projekt "Kollektiv stress" i perioden august 2009 til jan 2015:

Publicerede videnskabelige artikler

Kirkegaard, T. & Brinkmann, S. (in press) **Rewriting stress: Toward a cultural psychology of collective stress at work.** Culture and psychology

Kirkegaard, T. & Brinkmann, S. (in press) **"Which coping strategies does the work environment offer you?" A field study of the distributed nature of stress and coping**. Nordic Psychology

Indsendte videnskabelige artikler

Kirkegaard, T., Waldstrøm, C. & Andersen, JH. **"With a little coping from my friends": A mixed methods study of the distributed nature of coping in organizations**. Indsendt september 2014 til European Journal of work and organizational psychology

Bogkapitler

Kirkegaard, T. (2013) **Stress som en kollektiv proces: En feltfortælling**. I Andersen, M.F. & Brinkmann, S. (2013) Nye perspektiver på stress. Aarhus: Klim

Ph.d. afhandling

Kirkegaard, T. (2014) **Stress as a sociocultural phenomenon: Exploring the distributed nature of stress in an organizational context**. Aalborg University Press, Denmark

http://www.kommunikation.aau.dk/nyheder/Nyhed/download-phd-thesis-by-tanja-kirkegaard--stress-as-a-sociocultural-phenomenon.cid155503

Videnskabelige konferencer

Kirkegaard, T., Dalgaard, L. & Eskildsen, A. **New perspectives on stress in a work-related context**. Symposium at Association of Psychological Science, San Fransisco, USA, maj, 2014

Kirkegaard, T. **Collective stress at work**. EAOWP conference. London, England, april 2014

Kirkegaard, T. & Waldstrøm, C. **Intra-organizational networks**. NetSci2011-conference, Budapest, Ungarn, maj, 2011

Kirkegaard, T. & Waldstrøm, C. **Intra-organizational networks and stress**. Sunbelt conference, Riva, Italien, juni, 2010

Temadage o.lign.

Kirkegaard, T. **Stress som et sociokulturelt fænomen**. Ph.d. præsentation på Psykologisk institut Københavns Universitet, maj 2011

Kirkegaard, T. **Kollektiv stress**. Ph.d. præsentation, Arbejdsmedicinsk Klinik, Regionshospitalet Herning, april 2012.

Kirkegaard, T. **Collective stress at work**. Ph.d. præsentation på 'Stressmottagningen' i Stockholm

Kirkegaard, T. **Ledelse og kollektive processer på arbejdet**. Præsentation ved et LOOP seminar, Aalborg Universitet, Marts, 2012

Kirkegaard, T. **Organisatoriske faktorer og kollektive processer på arbejdet**. Præsentation af foreløbige resultater for HR-gruppe på den deltagende virksomhed maj, 2012

Kirkegaard, T. **Sociale og kulturelle processers indvirkning på stress**. Præsentation af foreløbige resultater for de deltagende afdelinger på den deltagende virksomhed, juni, 2012

Kirkegaard, T. **Stress som et socialt og kulturelt fænomen**. Præsentation af resultater på psykologisk institut, Aarhus Universitet, oktober 2013

Kirkegaard, T. **Kollektiv stress på arbejdet**. Undervisning på folkeuniversitetet, Aarhus, Herning, Odense, foråret 2014

Kirkegaard, T. **Kollektive stressprocesser**. Temadag i Region Midt, maj, 2014

Kirkegaard, T. **Kollektiv stress på arbejdet**. Temadag, Arbejdstilsynet, nord, maj 2014

Kirkegaard, T. **Kollektiv stress**. Præsentation af endelige resultater for HR-partnere, arbejdsmiljørepræsentanter og arbejdsmiljøprofessionelle fra den deltagende virksomhed, sept. 2014

Kirkegaard, T. **Håndtering af stress**. Temadag, Arbejdstilsynet, nord, oktober, 2014

Kirkegaard, T. **Kollektiv stress**. Præsentation af endelige resultater for ledere fra den deltagende virksomhed, dec. 2014

Medier

Nordjyske Stifttidende, "*Når travlhed er et mål i sig selv*". 11/01/14

DR midtvest, "*Vi kan snakke os til stress*" 09/01/15

Herning Folkeblad, "*Psykolog tager ph.d. i stress*" 19/01/15

www.arbejdsmiljøviden.dk, "*Ledelsesstil har indflydelse på medarbejdernes stress*" 26/01/15

Jyllandsposten, Magasinet Karriere, "*Ansatte kan køre hinanden ned i en ond spiral af stress*" 04.02.15

2. Dansk og engelsk resume

Dansk resume

Projektet 'Kollektiv stress' fokuserer på, hvordan sociale og kulturelle processer indvirker på, hvordan medarbejdere vurderer deres arbejdsbetingelser og handler i forhold til dem. Ud fra et feltarbejde kombineret med spørgeskemadata konkluderer studiet, at en kombination af sociale, kulturelle, arbejdsorganisatoriske og fysiske forhold er medvirkende til at skabe gruppe forskelle i måden arbejdsbetingelserne bliver vurderet på og hvordan grupperne handler i forhold til dem. Gruppeforskellene intensiveres på baggrund af en oplevelse af ledelsen som ikke-støttende i forhold til oplevelsen af arbejdspres, hvor mere kollektivt orienterede grupper udviklede kollektive stressprocesser. Mere individualistisk orienterede grupper forsøgte derimod at intensivere forsøg på at arbejde sig ud af arbejdspresset.

Baggrund

Stress er blevet et stigende problem hos mange mennesker og på mange arbejdspladser. Der har både i litteraturen samt i den populære forståelse af stress været meget fokus på de individuelle faktorer, der kan forklare menneskers udvikling af stress såsom individets grad af sårbarhed, grad af perfektionisme, tidligere oplevelser med stress osv.

Formålet med denne ph.d. var at undersøge, hvordan sociale og kulturelle processer på arbejdspladsen påvirker vores måde at forstå stress, at vurdere vores arbejdsbetingelser samt påvirker vores måde at handle i forhold til stress.

Materiale og metode

Studiet er et mixed methods studie, hvor både kvantitative og kvalitative metoder blev brugt. To afdelinger på en større dansk virksomhed blev fulgt over et år med 3 spørgeskemarunder og 5 mdrs.

feltarbejde. I spørgeskemaet blev der spurgt ind til deres sociale netværk, arbejdsmæssige betingelser, stressniveau og copingstrategier.

Resultater

Resultaterne viste, at der var gruppeforskelle i den måde medarbejderne forstod stress, i den måde de vurderede deres arbejdsbetingelser og i den måde de håndterede stress.

Den ene gruppe havde tendens til i højere grad at forsøge individuelt at tilpasse sig arbejdspresset ved at forsøge at øge arbejdstiden, arbejdshastigheden, øge effektiviteten, nedsætte kvaliteten eller øge egne ressourcer. Den anden gruppe havde derimod tendens til at forsøge kollektivt at ændre arbejdsbetingelserne ved at adressere ledelsen samt søge faglig og social støtte hos kolleger.

Undersøgelsen viste yderligere, at forskellene i stresshåndtering mellem de to grupper var påvirket af den måde deres arbejde var organiseret på, deres fysiske placering, kommunikationen og interaktionen i grupperne og den organisatoriske kultur.

Resultaterne viste også, at en oplevelse af en ikke-støttende ledelse var medvirkende til, at de to grupper blev fortsat mere polariseret i deres måder at håndtere stress på. Den kollektivt orienterede gruppe øgede deres forsøg på at ændre arbejdsbetingelserne, men oplevelsen af, at det ikke var muligt, synes at skabe kollektive stressprocesser, hvor medarbejderne som gruppe udviklede en stigende oplevelse af stress. Den individuelt orienterede gruppe intensiverede deres forsøg på at arbejde sig ud af problemerne.

Konklusion

Resultaterne fra denne ph.d. viser vigtigheden af at integrere flere forskellige arbejdsmæssige forhold på arbejdspladsen i forhold til forståelsen af, hvorfor medarbejderne vurderer og håndterer arbejdsbetingelserne som de gør, og at et individuelt fokus ikke er nok til at forstå stress. Frem for at se på ressourcer og barrierer for stresshåndtering i individet bør man flytte fokus til ressourcer og barrierer for stresshåndtering i arbejdsmiljøet.

Resultaterne viser også betydningen af en støttende ledelse i forhold til medarbejdernes vurdering af problematiske forhold på arbejdspladsen, da det ellers i værste fald kan betyde udvikling af kollektive stressprocesser.

Engelsk resume

The project 'Collective stress" focuses on how social and cultural processes enter into how employees evaluate their working conditions and act according to them. A field study combined with questionnaire data concludes that a combination of social, cultural, work organizational and physical factors contributes to creating group differences in the way working conditions are being evaluated and how the groups acted in relation to them. The group differences are intensified due to an experience of the management being non-supportive in relation to an experience of an increasing work pressure, where the collective oriented groups developed collective stress processes. The individualistic oriented groups on the contrary intensified their attempt to work their way out of the problem.

Background

Stress has become an increasing problem for many people and on many work places. In the literature as well as in the lay understanding of stress, there has been a focus on the individual factors in explaining the development of stress such as the individuals vulnerability, perfectionism etc.

The purpose of this PhD was to explore how social and cultural processes at the work place enter into our way of understanding stress, evaluating our working conditions as well as enter into our way of acting in relation to stress.

Material and method

The study is a mixed methods study, where quantitative and qualitative methods were used. Two departments at a larger Danish company were followed during a period of a year with three rounds of questionnaire and 5 months of fieldwork. The questionnaire comprised questions about the social network, work conditions, stress level and coping strategies.

Results

The results showed group differences in the way the employees understood stress, in the way they evaluated their working conditions and in the way they coped with stress.

One of the groups was characterized by trying to individually adjusting to the work pressure by enhancing the time spent on work, the work pace, the efficiency, reducing the quality of their work and enhancing their own resources. The other group was characterized by trying to collectively altering their work conditions by addressing the management and seeking professional and emotional support from colleagues.

The study showed furthermore that the differences in coping between the two groups were shaped by the way their work was organized, their physical placement, the communication and interaction in the groups as well as the organizational culture.

The results also showed that an experience of a non-supporting management contributed to, that the two groups became increasingly polarized in their way of coping with stress. The collective oriented group enhanced their attempts to alter their working conditions, but the experience that the management did not accommodate their concerns seem to create collective stress processes where the group developed an increasing experience of stress. The individual oriented group intensified their attempts to work their way out of the problems.

Conclusion

The results show the importance of integrating different work-environmental aspects in understanding why employees evaluate and cope with the working conditions and that an individual perspective on stress is not enough. Instead of focusing on resources and barriers for coping within the individual, there is a need of focusing on resources and barriers for coping in the work environment.

The results also show the importance of a supportive management because it could turn into a development of collective stress processes.

3. Beskrivelse af projektets formål, metode og udførelse

Formålet er at undersøge kollektive stressprocesser på arbejdspladser:

Hensigten er således at undersøge:

- I hvilket omfang der forekommer kollektive stressprocesser på arbejdspladser.
- Hvilke arbejdsmæssige faktorer og sociale interaktionsformer der er medvirkende til dannelsen af kollektive stressprocesser.
- Hvilke arbejdsmæssige faktorer og sociale interaktionsformer der er medvirkende til kollektive positive forholdemåder til arbejdsmiljøet.

For at besvare disse forskningsspørgsmål er et design valgt, der muliggør en undersøgelse af både omfang af kollektive stressprocesser og udforskning af de kontekstuelle processer som indvirker på de kollektive stressprocesser.

Derfor er et mixed methods design valgt som kombinerer kvantitative og kvalitative metoder. Designet er et multi-case studie på to afdelinger på en multinational virksomhed, hvor en spørgeskemaundersøgelse, foretaget 3 gange med et halvt års mellemrum. er kombineret med 5 mdrs. feltarbejde inkluderende individuelle og gruppeinterviews. Se tabel 1:
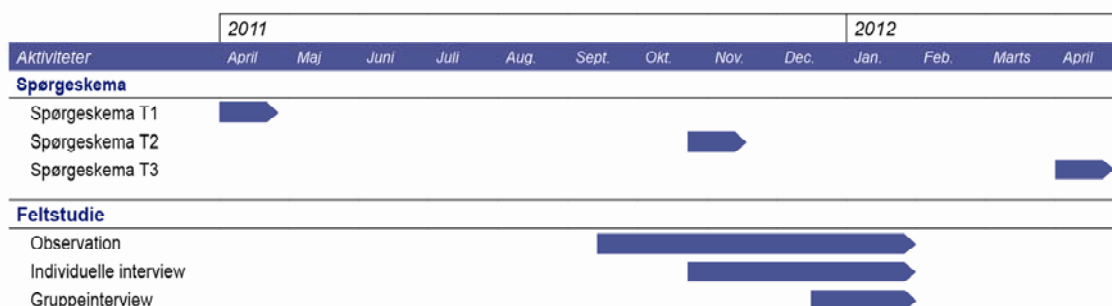
Deltagere

Virksomheden er en multinational virksomhed med ca. 6.000 ansatte som arbejder med forskning, produktion og salg rundt om i verden. Baggrunden for valg af denne virksomhed var, at det var en stor virksomhed med mange afdelinger, hvilket gjorde fuldførelsen af studiet mindre sårbart for eventuelle frafald blandt deltagerne. Det ville således være nemmere at finde nye afdelinger, der kunne deltage. Det skulle også være en virksomhed med afdelinger, hvor flere forskellige professioner arbejdede sammen, da det gav mulighed for både at se på faggrupper og sociale grupperinger i forhold til stress og coping.

De to deltagende afdelinger der blev valgt var en forsknings enhed og en produktions enhed. Baggrunden for valg af disse var at de var karakteriseret ved forskellige faggrupper der arbejdede sammen samt at den ene afdeling havde en høj forekomst af stress blandt de ansatte og den anden en lav forekomst af stress blandt de ansatte. Dette valg af cases med maximum-af-variation (Flyvbjerg, 2006) gav mig muligheden for at undersøge forskellige former for kollektive processer. Nedenfor er de demografiske informationer om de to afdelinger beskrevet:

	Forskningsenhed	Produktionsenhed
Ansatte	**Total: 50**	**Total: 27**
Alder	Mean: 42.5 years Range: 23–63	Mean: 46.7 year Range: 35–60
Køn	Mænd: 52% Kvinder: 48%	Mænd: 40.7% Kvinder: 59.3%
Anciennitet	Mean: 13.44 years Range: <1–42	Mean: 14.07 years Range: 1–39

Tabel 2: Demografiske data

Forskningsprocedure for den kvantitative metode

Spørgeskemaet blev sendt ud til alle medarbejdere på de to afdelinger pr. e-mail 3 gange på de 12 mdr. – ved baseline (T1), efter 6 mdr. (T2) og efter 12 mdr. (T3). Deres kontaktdata kom fra HR-afdelingen. Svarprocenten er vist nedenfor:

	T1	T2	T3
Forskningsenhed Svarprocent	74%	98%	98%
Produktionsenhed Svarprocent	92.6%	88.9%	85.2%

Tabel 3: Svarprocent

Alle tre gange var en reminder sendt ud til deltagerne efter en uge.

Spørgeskemaet bestod af to dele. Den første del indbefattede 7 relationelle spørgsmål som skulle udmunde i en social netværks analyse, og hvor en "roster" metode blev brugt (Marsden, 1990) til

udvælgelse. Den består af en liste af alle navnene på medarbejderne i afdelingerne, som hver deltager kan vælge imellem, når de besvarer de relationelle spørgsmål. Disse spørgsmål fokuserer på hyppigheden af kommunikation med kollegaer, vigtigheden af både den arbejdsrelaterede og ikke-arbejdsrelaterede interaktion med kollegaer, ønsket om mere interaktion med andre og den oplevede tillid i forhold til kollegaer.

I dette studie var kun ikke-arbejdsrelateret interaktion med kollegaer rapporteret da formålet med studiet var at undersøge sociale relationers indflydelse på stress.

Den anden del af spørgeskemaet bestod af 120 items som målte arbejdsmiljømæssige faktorer (Kristensen et al., 2005), stress symptomer (Kristensen et al., 2005), oplevet stress (Cohen et al., 1983), coping strategier (Carver, 1997), og emotionel smitte (Mehrabian & Epstein, 1972).

Arbejdsmiljømæssige faktorer

The Copenhagen Psychosocial Questionnaire (COPSOQ) er et vel-valideret standardiseret spørgeskema som er udviklet af NFA i Danmark (Kristensen et al., 2005). Den inkluderer 30 skalaer baseret på 141 items, men pga. længden af spørgeskemaet blev specifikke skalaer valgt til studiet. Resultatet var 24 skalaer (inkluderende stress-skalaen) baseret på 90 items: *type af produktion og opgaver* (kvantitative og emotionelle krav), *arbejdsorganisering og arbejdsindhold* (indflydelse på arbejdet, muligheder for udvikling, graden af frihed i arbejdet, mening i arbejdet, commitment), *interpersonelle relationer og ledelse* (forudsigelighed, rolleklarhed, rollekonflikter, ledelseskvalitet, social støtte, feedback, sociale relationer, følelsen af sammenhæng) og *forening af arbejde og fritid* (job tilfredshed, arbejds-familie konflikt). For de fleste af spørgsmålene var intensitet (fra 'i høj grad' til 'i lav grad') eller hyppighed (fra 'altid' til 'aldrig/næsten aldrig') rapporteret på en 5-point Likert skala.

Stress symptomer

Stress skalaen er også fra COPSOQ (Kristensen et al., 2005) og måler generelt helbred, mentalt helbred, vitalitet, adfærdsmæssig stress, somatisk stress og kognitiv stress. Deltagerne blev bedt om at rate på en 5-point Likert skala fra 'aldrig' til 'meget ofte', hvordan de har haft det de sidste 4 uger.

Oplevet stress

For at måle 'oplevet stress' blev The Perceived Stress Scale brugt som er en selv-rapporteret måling af global stress og måler i hvilken grad man finder sit liv uforudsigeligt, ukontrollerbart og overvældende. Den består af 10 spørgsmål fordelt på en 5-point Likert skala rangerende fra 'aldrig' til 'meget ofte'.

Coping

Coping bliver målt ved brug af the Brief COPE Questionnaire (Carver, 1997; Carver et al., 1989), som måler brugen af forskellige coping strategier. Det er en 28 item skala, som måler 14 dimensioner af coping på en 4 point Likert skala rangerende fra 'aldrig' til 'meget ofte'. Ni af de 14 dimensioner var valgt til dette studie: aktiv coping, selv distraktion, selvbebrejdelse, adfærdsmæssig tilbagetrækning, instrumentel støtte, positive reevaluering, humor, accept og venting.

Emotionel smitte

Til at måle emotionel smitte blev the Questionnaire Measure of Emotional Empathy (QMEE) (Mehrabian & Epstein, 1972) brugt. Formålet med skalaen er at måle emotionel empati og dermed den emotionelle respons på andres emotionelle reaktioner (Mehrabian & Epstein, 1972). Det er en 33-item skala og indeholder 7 subskalaer, hvoraf den ene er "the susceptibility to emotional contagion". Denne subskala er brugt i dette studie. Subskalaen indeholder 7 spørgsmål på en 5-point Likert skala rangerende fra 'aldrig' til 'meget ofte'.

I dette studie er kun resultaterne fra de relationelle spørgsmål samt stress og coping parametrene rapporteret. Resultaterne fra målingerne af arbejdsmiljømæssige faktorer blev kun brugt til at kortlægge det psykosociale arbejdsmiljø på de to afdelinger, hvilket blev rapporteret til de respektive afdelinger. Min sample size var derudover også for lille til at foretage statistiske analyser med multiple parametre.

Analyse af de kvantitative data

Statistiske analyser via SPSS (IBM, 2012) blev foretaget. Formelle og uformelle gruppeforskelle blev sammenlignet ved brug af t-tests på to tidspunkter (T2 og T3). Pga. en lav svar procent ved T1 (specielt blandt den ene af faggrupperne) blev dette dataindsamlingspunkt ikke brugt i analyserne. Multivariate analyser blev ikke foretaget pga. den forholdsmæssigt lave antal deltagere i studiet.

For at måle uformelle og dermed sociale gruppeforskelle blev en social netværks analyse foretaget og de udledte sociale subgrupper blev sammenlignet ved at bruge t-tests for at måle forskelle i coping mellem de to netværk. NetDraw (Borgatti, 2002; Borgatti et al., 2013) blev brugt til at visualisere gruppeforskellene i coping.

Den kvalitative metode

Den kvalitative dataindsamling indbefattede en kombination af feltarbejde, individuelle og gruppeinterviews. Feltarbejdet varede 5 mdr., ca. 2 dage om ugen i forskningsenheden fra september 2011 og 1 dag om ugen på produktionsenheden fra oktober 2011. Fra oktober 2011 til december 2011 blev de individuelle interviews foretaget og fra december 2011 – februar 2012 blev gruppeinterviewene foretaget. Denne triangulering af metode er vist i følgende figur:
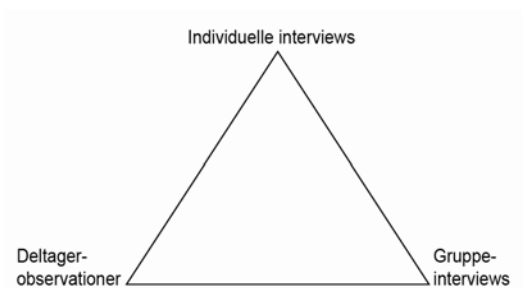
Figur 1. Metode triangulering for den kvalitative del af studiet.

Demme tilgang gav mig mulighed for at udforske stress som et distribueret fænomen fra forskellige vinkler og fungerede også som en fortsættende valideringsproces (Denzin & Lincoln, 2008). Jeg begyndte med observationer for at få en forståelse for feltet inden påbegyndelsen af interviews. Jeg ville også gerne have en indsigt i gruppekommunikationen/dynamikken og gruppekonstellationerne før jeg påbegyndte gruppeinterviewene. De individuelle og gruppe interviewene var således både baseret på data fra feltarbejdet såvel som min teoretiske ramme.
I tabellen vist nedenfor kan man se antallet af individuelle og gruppe interviews samt observationsdage.

	Forskningsenhed	Produktionsenhed
Individuelle interviews	**Total: 10**	**Total: 2**
Gruppeinterviews	**Total: 6**	**Total: 2**
Total	**16 interviews**	**4 interviews**
Observationer	45 dage	18 dage

Tabel 5. Dataindsamling

De individuelle interviews varede omkring 1 time og blev foretaget på arbejdsstedet. De blev optaget og efterfølgende transskriberet. Gruppe interviewene varede omkring 1½ time og var ligeledes optaget og efterfølgende transskriberet. I den følgende tabel er information om gruppeinterviewene vist.

	Afdeling	Funktion	Division A	Division B	Nyansatte	N
Gruppeinterview 1	Forskningsenhed	Forskere	1			5
Gruppeinterview 2	Forskningsenhed	Forskere	1		1	5
Gruppeinterview 3	Forskningsenhed	Forskere		1		12
Gruppeinterview 4	Forskningsenhed	Laboranter	1			4
Gruppeinterview 5	Forskningsenhed	Laboranter		1		4
Gruppeinterview 6	Forskningsenhed	Assistenter				4
Gruppeinterview 7	Produktionsenhed	Laboranter				5
Gruppeinterview 8	Produktionsenhed	Laboranter og assistenter				5

Tabel 6. Gruppe interview komposition.

4. Beskrivelse af om og hvordan projektets formål og hensigt er blevet opnået

Formålet som den var beskrevet i den oprindelige ansøgning lød på:
- I hvilket omfang der forekommer kollektive stressprocesser på arbejdspladser.
- Hvilke arbejdsmæssige faktorer og sociale interaktionsformer der er medvirkende til dannelsen af kollektive stressprocesser.
- Hvilke arbejdsmæssige faktorer og sociale interaktionsformer der er medvirkende til kollektive positive forholdemåder til arbejdsmiljøet.

I ansøgningen og i den første del af studiet blev der taget udgangspunkt i begreberne 'kollektiv appraisal' og 'kollektiv coping' (Länsisalmi et al., 2000), i et forsøg på at operationalisere 'kollektive stressprocesser'. Dvs. fokus var på hvorledes man kollektivt evaluerede (appraisal) sit arbejdsmiljø, og hvordan man kollektivt håndterede (coping) arbejdsmæssige stressorer. Undervejs i studiet gik jeg bort fra disse begreber og i det følgende vil jeg kort beskrive baggrunden for dette valg, og dermed hvorfor det er andre begreber end de først beskrevne, der bruges i de publicerede artikler.

Litteraturen omkring disse begreber er kendetegnet ved overvejende at fokusere på kollektiv coping, og er samtidig kendetegnet ved at forstå kollektiv coping på forskellig måde: 1) en handling som er formet af sociale og kulturelle faktorer, 2) en specifik kollektiv coping strategi såsom en koordineret handling i en gruppe og 3) en social-orienteret coping strategi såsom at søge social støtte hos andre.

I løbet af dataindsamlingen blev det mere og mere tydeligt, at begrebet om kollektiv appraisal og coping ikke rummede de resultater, jeg fandt og derudover var det også misvisende, at begreberne rummede den flertydighed som er beskrevet ovenfor.
Først og fremmest havde jeg brug for et begreb, der ikke havde de kollektive konnotationer forstået som koordinerede handlinger, idet mine resultater viste, at coping godt kunne være kollektiv uden at være koordineret. Eksempelvis håndterede en af faggrupperne ikke stress koordineret, men havde alligevel samme handlingsmønstre ud fra nogle implicitte legale måder at handle på som var

karakteristiske for faggruppen. Jeg ønskede derfor et begreb, der fokuserede på, hvordan coping var kulturelt formet, men ikke nødvendigvis udført kooperativt.

Dernæst indbefattede begrebet kollektiv coping et fokus på fælles gruppeprocesser og dermed blev sociale og kulturelle forhold centrale i at forstå kollektiv coping. Da mine resultater tydeligt viste, at fysiske forhold og arbejdsmiljømæssige/organisatoriske forhold også påvirkede coping både individuelt og på gruppeniveau manglede jeg et begreb, der indfangede dette også.

Derfor udviklede jeg på baggrund af empiri og mit teoretiske ståsted i den kulturelle psykologi (Valsiner, 2007) og teorien om distribueret kognition (Hutchins, 1995) begreberne *distribueret appraisal og distribueret coping* som netop indfanger, hvorledes både fysiske, arbejdsmiljømæssige, sociale og kulturelle forhold indvirker på individuel og kollektiv coping. Disse begreber vil blive beskrevet i kapitel 4.

Dermed kan man sige, at udviklingen af disse begreber er en konsekvens af resultaterne af studiet og ikke en del af formålet med studiet som sådan. Udviklingen af disse begreber har nuanceret de eksisterende begreber som forholder sig til kollektive stressprocesser og indbefatter nye perspektiver på fremtidig forskning samt på stressforebyggelse og trivsel på arbejdspladser, hvilket vil blive beskrevet i kapitel 7.

Der opereres dog fortsat med begrebet kollektive stressprocesser som vil blive beskrevet mere indgående i resultatafsnittet. Overordnet forstås kollektive stressprocesser i dette studie som fælles måder at vurdere arbejdsmiljøet på som problematisk og fælles måder at cope med det på, som bliver formet af både kulturelle, sociale, fysiske og arbejdsorganisatoriske karakteristika. De fælles måder at vurdere arbejdsmiljøet og cope på er ikke nødvendigvis koordinerede, men skabes ud fra de betingelser faggrupperne deler. En yderligere karakteristik af disse processer vil blive beskrevet i følgende afsnit.

5. Hovedresultater fra studiet

Hovedresultaterne i forhold til det initierende formål med studiet:

1) Der forekommer kollektive stressprocesser på arbejdspladser, og de forekommer primært i kollektivt orienterede grupper.

2) Fælles arbejdsopgaver, tæt fysisk placering, kollektiv faggruppekultur og tætte sociale relationer kan udvikle sig til kollektive stressprocesser blandt medarbejderne, hvis de oplever et stigende arbejdspres kombineret med en ikke-støttende ledelse.

3) Kollektive arbejdsorganiseringer, fælles arbejdsopgaver, tæt fysisk placering, inkluderende faggruppekultur og tætte sociale relationer har betydning for konstruktive kollektive processer, hvis det kombineres med en støttende ledelsesstil.

Studiet viste dog også yderligere resultater, som beskrives i det følgende:

4) Udvikling af nye begreber: *distribueret appraisal* og *coping* som rummer, hvordan ens evaluering af stressorer og håndtering af stress er indlejret i den fysiske, organisatoriske og kulturelle/sociale kontekst.

5) Der var gruppeforskelle blandt faggrupper og sociale grupper i, hvordan de vurderede deres arbejdsforhold og hvordan de håndterede en oplevelse af stress.

6) Den fysiske kontekst har betydning for ens vurdering af arbejdsbetingelser og håndtering af stress.

7) Coping på arbejdspladsen kan også karakteriseres ved en individuel tilpasningsorienteret vs. kollektiv ændringsorienteret coping praksis, hvilket udfordrer den traditionelle distinktion mellem problemfokuseret og emotionsfokuseret coping.

5.1. Forekomst af kollektive stressprocesser

Forekomsten af kollektive stressprocesser behandles i:

Kirkegaard, T., Waldstrøm, C. & Andersen, JH. **"With a little coping from my friends": A mixed methods study of the distributed nature of coping in organizations**. Indsendt til European Journal of Work and Organizational Psychology

Her er hovedresultatet, at der er signifikante faggruppeforskelle i coping mellem forskere og laboranter, og at disse forskelle intensiveres over tid. I målingen i tidsperioden T2 og T3 falder forskerne i brugen af næsten alle coping strategier og specielt i brugen af instrumentel støtte. Laboranterne stiger i brugen af næsten alle coping strategier og specielt i brugen af instrumentel støtte. Begge grupper bruger aktiv coping hyppigst, hvilket betyder at de forsøger at handle sig ud af problemerne, men den kvalitative undersøgelse viser, at der er stor forskel på, hvordan de handler sig ud af dem, hvilket vil blive beskrevet senere. Baggrunden for denne forskel i coping og intensivering af forskellene grupperne imellem skal findes i både ledelsesforhold og gruppekarakteristika.

Inden den anden spørgeskemamåling (T2) opleves en stigning i arbejdspres pga. nye store projekter, som afdelingen skal varetage og i begyndelsen reagerer begge grupper ved at intensivere deres arbejdsindsats kombineret med at adressere ledelsen i forhold til at gøre opmærksom på arbejdspresset og i forhold til at forsøge at overbevise ledelsen om flere ressourcer til afdelingen. Begge faggrupper oplevede, at ledelsen ikke lyttede til deres frustrationer og at ledelsen afviste, at ændre på arbejdsforholdene. Denne oplevelse af manglende støtte fra ledelsen betød, at de to grupper begyndte over tid at adskille yderligere sig i deres coping praksis og intensivere de gruppekarakteristika som kendetegnede dem.

Det som kendetegnede forskergruppen i forvejen var en *individuel tilpasningsorienteret coping praksis*, hvor de forsøgte at arbejde sig ud af tingene individuelt, mens laborantgruppen var kendetegnet ved en *kollektiv forandringsorienteret coping praksis*, som var rettet mod at forsøge kollektivt at ændre arbejdsbetingelserne.

Intensiveringen af disse praksisser betød hos forskerne, at de intensiverede deres forsøg på at arbejde sig ud af arbejdspresset ved at øge tiden brugt på arbejdsopgaver, øge arbejdshastigheden,

nedsætte kvaliteten på arbejdet samt øge effektiviteten, mens det for laborantgruppen betød, at de intensiverede deres forsøg på at ændre de arbejdsmæssige betingelser gennem interne møder i gruppen, hvor strategier blev diskuteret, møder med ledelsen samt hyppige fortløbende diskussioner om arbejdsmiljøet. Derudover intensiverede de deres brug af støtte fra hinanden og udtrykte deres frustrationer til hinanden.

Laboranternes coping praksis synes på mange måder at have været beskyttende for medarbejderne, men da de oplevede en barriere for deres kollektive handlemuligheder og de intensiverede kampen for at ændre arbejdsbetingelserne, blev denne kamp en ekstra stressor for dem. Disse processer har jeg valgt at betegne *kollektive stressprocesser* og er kendetegnet ved følgende:

Ændringsfokusering: Forsøger kontinuerligt at ændre arbejdsbetingelserne
Problemfokusering: Fokusering på de negative forhold på afdelingen
Generalisering: Virksomheden som helhed bliver set i et negativt lys
Cirkularitet: Cirkulære negative fortællinger om arbejdspladsen og ledelsen
Distribueret emotionalitet: Vrede, frustration, skuffelse, ked af det hed deles med hinanden.
Resignation: Opgiver forsøg på handling

Processerne synes i sig selv at fungere som en ekstra stressor oveni oplevelsen af øget arbejdspres og en ikke-støttende ledelse og resultaterne fra målingen af stress over tid viser, at laboranterne stiger i oplevet stress fra anden spørgeskemarunde T2 til tredje spørgeskemarunde T3. De kollektive stressprocesser kan være forklaringen på dette.

Et andet hovedresultat, var, at der var sociale gruppeforskelle i coping, hvilket var karakteriseret ved, at to sociale grupperinger inden for den samme faggruppe adskilte sig signifikant i forskellige coping strategier. Specielt drejer det sig om at give op i forsøget på at cope, søge instrumentel støtte og aktivt forsøge at handle sig ud af tingene. Baggrunden for denne forskel skal findes i, at der er den ene gruppe oplevede en specifik hændelse, hvor de var utilfreds med ledelsens måde at behandle en medarbejder fra deres gruppe, hvilket førte til en følelse af stor frustration blandt gruppens medlemmer. Gruppens måde at cope med det på var først at forsøge at handle sig ud af problemet, hvilket blev afløst af "storytelling", hvor utilfredshed med ledelsen blev udtrykt, historier om ledelsen fortalt osv. som til sidst blev afløst af at opgive at forsøge at cope med det.

5.2. Betydningen af organisatoriske og sociale forhold for kollektive stressprocesser

Andet delformål: Hvilke arbejdsmæssige faktorer og sociale interaktionsformer, der er medvirkende til dannelsen af kollektive stressprocesser, behandles i artiklerne:

Kirkegaard, T. & Brinkmann, S. (in press) **"Which coping strategies does the work environment offer you?" A field study of the distributed nature of stress and coping**. Nordic Psychology

Kirkegaard, T., Waldstrøm, C. & Andersen, JH. **"With a little coping from my friends": A mixed methods study of the distributed nature of coping in organizations**. Submitted sept. 2014 i European Journal of Work and Organizational Psychology

I den første artikel peges der på, at arbejdsorganiseringen, arbejdets karakteristika, de fysiske omgivelser, professionskulturen og specifikke gruppedynamikker indvirker på den måde vi tænker og handler i forhold til vores arbejdsbetingelser og i forhold til stress. Mere specifikt konkluderes det, at en kombination af en individuel arbejdsorganisering, specialisering af arbejdet, enmands-kontorer samt en performance og konkurrencepræget professionskultur er med til at skabe en bestemt appraisal og coping praksis, hvor medarbejderne oplevede travlhed som både noget positivt og negativt og coping strategierne gik i retning af at øge arbejdstiden, arbejdshastigheden, effektiviteten, nedsætte kvaliteten af arbejdet og øge egne ressourcer. Denne faggruppe havde således en tendens til at tilpasse sig arbejdsforholdene og arbejdspresset og i mindre grad forsøgte at ændre dem, således at arbejdspresset kunne mindskes.

Det konkluderes også, at en kollektiv arbejdsorganisering, fælles arbejdsområder, flermandskontorer samt et stærkt gruppesammenhold er med til at skabe en mere kollektiv appraisal og coping praksis, hvor medarbejderne i højere grad adresserede ledelsen kollektivt i forhold til at ændre arbejdsforholdene samt søge emotionel og faglig hjælp fra hinanden.

I den anden artikel sættes der mere fokus på, hvordan en ikke-støttende ledelsesstil er med til at forstærke kulturelle karakteristika i to faggrupper, således at de polariseres i deres coping praksis. Denne reinforcering synes at skabe en ufleksibel coping praksis hos begge grupper og er med til i gruppen med den kollektive organisering at skabe en kollektiv øget oplevelse af stress som tidligere beskrevet.

5.3. Betydningen af organisatoriske faktorer og sociale forholds betydning for konstruktive kollektive processer.

Tredje delformål: Hvilke arbejdsmæssige faktorer og sociale interaktionsformer, der er medvirkende til kollektive positive forholdemåder til arbejdsmiljøet? bliver behandlet i:

Kirkegaard, T. & Brinkmann, S. (in press) **"Which coping strategies does the work environment offer you?" A field study of the distributed nature of stress and coping**. Nordic Psychology

Kirkegaard, T. & Brinkmann, S. (in press) **Rewriting stress: Toward a cultural psychology of collective stress at work.** Culture and psychology

Kirkegaard, T. (2014) **Stress as a sociocultural phenomenon: Exploring the distributed nature of stress in an organizational context**. Aalborg University Press, Denmark

Kombinationen af en kollektiv organisering af arbejdet, placering i flermandskontorer, et tæt gruppesammenhold og en støttende ledelse synes at være medvirkende til at skabe kollektive konstruktive processer. De konstruktive kollektive processer var kendetegnet ved, at medarbejderne støttede hinanden, hjalp hinanden under travlhed, tog potentielle konflikter i opløbet, tog problemerne kollektivt med ledelsen med det samme, stoppede negative processer i grupperne og kom med konstruktive løsninger i forhold til de problemer, som grupperne mødte eller de problemer, som de hver især mødte. Disse processer blev specielt observeret i den ene af casene, hvor ledelsesstilen var kendetegnet ved at være inkluderende og støttende i forhold til oplevelsen af arbejdspres.

Det var samtidig kendetegnet for grupperne, at hvis de oplevede en ledelse, der ikke var støttende, og de ikke oplevede, at ledelsen var tilgængelig i forhold til at hjælpe med de problemer, de oplevede, så kunne de konstruktive processer vendes til negative processer, som kom til at fungere som en supplerende stressor for medarbejderne. Disse processer blev specielt observeret i den anden case – i forskningsenheden blandt laboranterne.

6. Udvikling af begreberne distribueret appraisal og coping

Centralt i dette studie er den teoretiske udvikling af begreberne *distribueret appraisal og coping*. Baggrunden for at udvikle disse begreber er, at de traditionelle appraisal og coping begreber indbefatter en individualistisk forståelse af den måde, man evaluerer sine omgivelser på og vælger at cope med det. Med begreberne distribueret appraisal og coping ønskes det at accentuere, at den måde man vurderer og coper med sit arbejdsmiljø er formet af kommunikation og interaktion med andre samt er formet af de fysiske omgivelser og arbejdsorganiseringer, man indgår i. Når man eksempelvis vurderer, hvorvidt et arbejdspres er truende for ens velbefindende benytter man sig af forskellige interne (hukommelse, tidligere erfaringer) og eksterne (kommunikation med andre, diskurser, fysiske artefakter, arbejdsorganisering etc.) tolkningsressourcer. Dvs. den viden om ex. arbejdspres som kommer fra andre, fra diskurser eller fra ex. en tavle med ordrer som viser mængden af arbejdsopgaver etc. kommer også til at indgå som en del af medarbejdernes måde at tænke om arbejdspresset. Dermed er det ikke kun individets personlighed og om personen er meget perfektionistisk eller ansvarsfuld der betinger om arbejdspres bliver vurderet som uoverskueligt. Vi gør dagligt brug af forskellige ressourcer i miljøet til at tolke om eksempelvis et arbejdspres er truende eller ikke.

Begreberne distribueret appraisal og coping kan fungere som analyseredskaber til at brede de mange facetter i arbejdsmiljøet ud, der er med til at forme den enkeltes appraisal og coping praksis. Udviklingen af disse begreber har sit udgangspunkt i teorier som netop arbejder med kognition som dybt indlejret i de sociale, kulturelle og fysiske omgivelser og som fokuserer på, hvorledes viden om hvordan man skal tænke og handle også ligger ude i omgivelserne. Udgangspunktet i sådanne teorier tages, fordi stressforskningen, som vi kender den i dag synes at være polariseret mellem på den ene side fokus på risikofaktorer i arbejdsmiljøet og på den anden side kognitive processer og personlighedsmæssige karakteristika hos individet. Et udgangspunkt i en mere helhedsorienteret teori, der forsøger at koble miljø og individ i selve vurderings- og handleprocessen synes at være relevant for at indfange det komplekse fænomen stress er.

7. Perspektivering af, hvordan projektets resultater på kort og lang sigt kan bidrage til at forbedre arbejdsmiljøet.

Projektets resultater kan bidrage til at sætte fokus på de forskellige forhold på arbejdspladsen der fungerer som ressourcer og barrierer for stresshåndtering og som er med til at forme en bestemt måde evaluering af arbejdsbetingelserne. Et sådant fokus vil kunne bidrage til nye forebyggelses- og interventionsmæssige perspektiver inden for 3 områder: 1) identificering af barrierer og ressourcer for coping, 2) fokusering på ledelsesstil, 3) identificering af medarbejderes coping praksis.

1) Projektets resultater kan bidrage til at forbedre arbejdsmiljøet, idet en øget viden om de forskellige forhold på arbejdspladsen, der fungerer som barrierer og ressourcer for stresshåndtering, kan nuancere og forbedre de forebyggelsesmæssige tiltag. I forebyggelses- og interventionsmæssig sammenhæng har man overvejende fokus på at give individet redskaber til at håndtere stress bedre eller man fokuserer på at forandre de identificerede risikofaktorer i arbejdsmiljøet. Dette projekts resultater vil åbne op for at se på de forhold, der former den enkeltes og gruppers håndteringspraksis og dermed give mulighed for at fjerne de barrierer i arbejdsmiljøet, der er for stresshåndtering og samtidigt øge ressourcerne. Målet er netop at skabe en mere fleksibel adgang til stresshåndtering på arbejdspladserne. Måderne det kan gøres på er f.eks. at ændre arbejdsorganiseringer, de fysiske placeringer eller ændre kulturen i grupperne. Virksomheden, hvor undersøgelsen blev udført, ændrede eksempelvis efterfølgende arbejdsorganiseringen, idet de lavede en makkerpar-ordning blandt forskerne, hvor de i stedet for at stå som eneansvarlig for et forskningsprojekt blev to om et forskningsprojekt. Dette gav en øget mulighed for at give faglig og social støtte til hinanden, som var noget denne gruppe ellers havde begrænset adgang til. Desuden havde de indført at nogle af forskerne to dage om ugen sad på samme storrums-kontor, hvilket også gav mulighed for forskerne i højere grad at søge faglig og social støtte.

2) Resultaterne fra dette studie viste desuden, at en oplevelse af en ikke-støttende ledelse kan forstærke de kulturelle karakteristika i de forskellige faggrupper og medvirke til at håndteringsstrategierne fikseres i ensidige forsøg på håndtering. Derudover at en ikke-støttende ledelse kan være medvirkende til at skabe kollektive stressprocesser hos mere kollektivt orienterede grupper. Disse resultater kan bidrage med nye forebyggelsesmæssige initiativer, da de kan sætte fokus på den ledelsesmæssige kommunikation i forhold til at undgå udviklingen af kollektive

stressprocesser. Undersøgelsen viste nemlig, at den ledelsesmæssige kommunikation om og ledelsens håndtering af et oplevet arbejdspres er vigtig i forhold til at undgå igangsættelsen af kollektive stressprocesser. I produktionsenheden hvor medarbejderne havde oplevelsen af en støttende ledelse og hvor kollektive stressprocesser ikke forekom, var den ledelsesmæssige kommunikation kendetegnet ved:

a) Spejling af medarbejdernes frustrationer.

b) Kommunikation omkring, hvorfor ledelsen ikke kan eller vil ændre på arbejdsforholdene (hvis det er det, der er tilfældet).

c) Gennemsigtighed i hvilke overvejelser ledelsen har haft i forhold til det oplevede arbejdspres,

d) Inddragelse af medarbejderne i forhold til, hvordan de som afdeling kan komme igennem en periode med arbejdspres.

e) Forsøge at hjælpe medarbejderne såsom eksempelvis at tænke på nye måder at organisere arbejdet på som kan optimere arbejdsprocesserne så tid bliver frigivet, hente ekstra hjælp ind, fjerne opgaver der kan vente osv. Eksempelvis havde denne afdeling implementeret elementer af Lean i samarbejde med medarbejderne, hvilket medarbejderne vurderede havde bidraget til en større følelse af overblik over arbejdet samt en følelse af mere tid til udførelsen af dem.

Derudover viser resultaterne også, at det er vigtigt, at ledelsen er bevidst om, hvordan de som ledere forstår stress og travlhed. Hvis man forstår stress og travlhed som et individuelt forårsaget problem, så vil man ofte også fokusere på individuelle løsninger i form af optimering af den enkeltes coping stil. Det kan være med til at hæmme et konstruktivt møde med medarbejderne og give en følelse af, at arbejdsforholdene bliver negligeret.

3) Et centralt resultat i projektet var også, at der var specifikke måder at cope på, som var relateret til arbejdet. I den hidtidige coping forskning har man overvejende undersøgt coping i forhold til generelle livsomstændigheder frem for i mere specifikke sammenhænge såsom på arbejdet som har resulteret i en distinktion mellem problemfokuseret og emotionsfokuseret coping. Den problemfokuserede coping retter sig mod at forsøge at handle, mens den emotionsfokuserede coping retter sig mod at regulere emotionerne. Dette studie fandt, at en vigtig skelnen var mellem at tilpasse sig arbejdsforholdene eller ændre dem, hvilket er i overensstemmelse med et større studie fra 2013 (Astvik & Melin, 2013). Dermed pointerer dette studie, at der er forskellige måder at

handle sig ud af problemerne (tilpasning eller ændring), som har forskellige konsekvenser. Studiet af Astvik & Melin, (2013) konkluderer, at den tilpasningsorienterede coping praksis medfører øget stress, mens dette studie konkluderer, at også den ændrings-orienterede coping praksis kan medføre øget stress, hvis den er kombineret med en ikke-støttende ledelsesstil. En indsigt i de forskellige coping praksisser kan være medvirkende til, at arbejdspladser kan identificere uhensigtsmæssige coping praksisser i tide blandt medarbejdergrupper og forsøge at

Der er brug for at generalisere disse resultater yderligere og måle inden for flere faggrupper, således at arbejdspladser kan identificere uhensigtsmæssige coping praksisser i tide blandt medarbejdere.

8. En beskrivelse af, at arbejdsmiljøforskningsfonden har givet bevilling til projektet.

Arbejdsmiljøforskningsfonden har givet bevilling til projektet: Kollektiv stress

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BILAG 1: Projektets videnskabelige artikler

Rewriting stress: Toward a cultural psychology of collective stress at work

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Abstract. The aim of this article is to contribute theoretically to the development of a cultural psychological, i.e. dialogical and distributed, understanding of stress. First we challenge established cognitivist notions of stress and discuss philosophical and epistemological implications tied to this perspective. Then we introduce a dialogical, distributed and situated understanding of stress and rewrite central concepts from cognitive stress research such as appraisal and coping. This new orientation is related to a recent metaphysics of mind, according to which mental states and processes are embedded in and possibly even extend into the environment. This philosophical position is known as externalism and holds that the mind needs to be understood not just by intrinsic mental features such as physiological or cognitive processes, but also in light of what either occurs or exists outside the organism. With reference to empirical examples, we argue that this framework can contribute to a new understanding of the situated and distributed nature of stress.

Key words: Stress, externalism, appraisal, coping, dialogue, distributed

Introduction

'I'm so glad working with Bryan, when he like sits and looks very relaxed when he works on an assignment, where I think the rest of the organization… and when you look at your mailbox – they were all really in a spin so in the end I had to say to him: "Bryan you sit and look so relaxed. Should I also be as relaxed and think the others are in a spin or how shall I interpret this?". Because actually I let myself be carried away by the atmosphere which I had experienced in the mailbox, where I began to think – wauw we are so busy and then Bryan sits there like so leaned back and relaxed'.

Intuitively, people tend to think in individualistic terms about the stress that allegedly permeates modern life, not least work life, where we often hear about a 'stress epidemic' (Wainwright &

Calnan, 2002). Stress is something that is inside us as isolated individuals, caused by different neuro-endocrinological pertubations. Although stress can be triggered by specific stressors in the environment, or by inadequate coping strategies, stress as a phenomenon is located beneath the skin and even inside the skull. From this common point of view, stress is understood as both a mental phenomenon and as an embodied phenomenon. But a perspective on stress as something embedded in or even extended into the physical and social environment has not been prevalent neither in the research on stress nor in lay discussions.

The example above is from an interview sequence from the first author's study at a large biotech company in Denmark where she conducted fieldwork in a period of 5 months in two different departments which comprised researchers, lab technicians and technicians. 12 individual interviews and 8 group interviews were conducted and the interviews and observations form the basis for this article. The interview sequence illustrates the social embeddedness of an appraisal process. The woman in the interview exemplifies how two opposing ways of judging a work situation are derived from her interaction with her colleagues and make her confused concerning how she should interpret the situation. This interview sequence, and many others like it, made us interested in how appraisal processes related to stress can be shaped in and through social interaction. We have come to think that appraising one's potentially stressful situations and considering how to cope, is not just a process occurring inside the individual, but often takes place in dialogue with others (who can be physically present or imagined others). But also the world of material objects is important: The physical surroundings with its artefacts can be conceived as part of a coping process inherent in a stress response, which we will address later in the article. To fully understand the complex phenomenon of stress, we will argue that we need to take the social and physical embeddedness into account. The empirical analyses developed from the research project will be published elsewhere, so, in the context of this paper, the examples included merely serve as indicators of how we believe that stress should be approached as a dialogical, distributed, and situated phenomenon.

Individualism and objectivism as approaches in contemporary stress research
Increasingly, contemporary stress research is polarized around two seemingly irreconcilable schools of thought. There is on one hand the individualistic approach represented by cognitive psychology, which focuses on the individual's ability to cope with stressful events (Lazarus & Folkman, 1984). On the other hand, there is the environmental approach such as work-environmental studies, which

focuses on identifying the specific risk factors in the environment that are meant to explain the development of stress (Karasek, 1979; Karasek & Theorell, 1990; Siegrist, 1996). While the cognitive understanding of stress concentrates on the individuals´ interpretation of the work environment as a mediating factor between the individual and the context, the work-environment studies operate with a more direct causality between work-environment characteristics and the development of stress (Siegrist, 2000; Wainwright & Calnan, 2002). The different theoretical and epistemological frameworks represented in the two schools of thought enhance the possibility of a reductionism either in the direction of individualism or that of objectivism. The work-environmental approach reduces the individual to a passive medium of extrinsic forces and, in our view (and borrowing from Harré), implicitly 'deletes the active, interpretative person from the ontology of psychology' (Harré, 2002, p. 131). The cognitive approach on the other hand stays enclosed within a subjective, almost Cartesian realm, and does not encompass the social and cultural praxis in which the individual is embedded, as part of the understanding of how stress develops.

Attempts have been made to reconcile these poles through different models such as the balance-model, where work stress is understood as a result of an imbalance between work demands and the resources of the employee (Siegrist et al., 2004), and later through more coping-oriented work-environment models (Bakker & Demenrouti, 2007). But these models still operate with an alleged gap between the individual and the context and thereby still reduce the world to rational individual subjects on the one hand and verifiable objects on the other. And, as Falmagne has stated, once positions are construed on a metatheoretical level, they are also easily construed as 'incompatible, bounded, and mutually exclusionary' (Falmagne, 2009, p. 796).

This polarization reflects the deep and perennial metaphysical chasm between the subjective and the objective, mind and matter, of Western philosophy. Several attempts to reconcile the positions have been made within philosophy of mind, but it has been quite a conceptual puzzle how the two interact. As part of a Cartesian heritage in western thinking, a long philosophical tradition has favored the isolated mind and ignored the importance of embodiment and situation (Gallagher, 2009). Philosophers such as Dewey, Heidegger, and Merleau-Ponty have articulated approaches to cognition, which recognize its situated nature, and researchers within cognitive psychology have more recently begun to emphasize the situated and distributed character of cognition (Clark, 2009;

Hutchins, 1995). But the situated, distributed, and cultural understanding of cognition has not yet been employed in stress research, which is needed if we want to capture the complexity in how stress develops in our lives in general and at work specifically.

In this article we begin to develop a distributed and cultural understanding of stress. We propose that stress can favourably be understood as extending into the social and physical environments. The individual is thus not 'a container of stress', but rather one part of a dynamic system, which includes social processes and the material world. This perspective is important in stress research for two main reasons: First because it is theoretically satisfactory (as we hope to demonstrate), and second because it goes against the ways that current treatments of stress are dominated by different versions of individual-focused cognitive therapy. A problem often emerges when employees come to interpret work environmental problems as caused by themselves as individuals, e.g. by failed coping strategies or personality features, instead of facing work environmental problems as a common problem at the work place.

The cognitive understanding of stress and its problems
Within the cognitive tradition, Lazarus (1922-2002) created a widely used theory of stress, which illustrates the role of psychological factors in mediating the person-environment transaction. Stress is viewed as a relationship between the person and the environment that is appraised as exceeding the persons´ resources for coping (Lazarus & Folkman, 1984). The concept of appraisal designates a two-stage transactional process in which the magnitude of a threat is evaluated in comparison with an evaluation of the individual's ability to cope with it. The first step in the process is primary appraisal of a potential stressor, which can have three outcomes: it may be appraised as irrelevant, beneficial, or stressful to the individual. Whether a potential stressor triggers the stress response depends upon the individual's secondary appraisal of her ability to cope with the potential stressor. A positive appraisal of the capacity to cope with a potential stressor reduces the experience of stress (Lazarus & Folkman, 1984). There are thus two processes, which serve as central mediators within the person-environment transaction – cognitive appraisal and coping.

Lazarus' cognitive understanding of stress helps throw light on the processes involved in the *agency* of the individual where the individual is not seen as a passive patient of problematic work conditions. Rather, the concept of appraisal highlights the role of individual differences concerning

the interpretation of environments that are otherwise 'objectively' equal for different individuals. The same can be said about the concept of coping, which emphasizes the active role played by the individual in trying to change the situation or the appraisal of it.

Despite its sophisticated and dynamical aspects, Lazarus' theory fails, however, regarding the cultural and social dimensions of the stress response and is thereby unable to account for how to integrate the individual and environmental dimensions. It acknowledges to a certain extent the importance of the environment in understanding the development of stress through its emphasis on a transaction between the individual and the environment, but, in line with the cognitive tradition, it also expounds an understanding of cognition as the individual's property, as something that is "in the head", and thereby concludes that appraisal and coping are individual processes as such. The problem of the polarized positions therefore persists, if we continue to consider appraisal and coping as something that is in the end only shaped by the individual (Wainwright & Calnan, 2002). In a draft written a week before his death, however, Lazarus stressed the fact that he, when he elaborated his appraisal and coping theory, did not acknowledge the impact of the specific social context and the interpersonal interactions (Lazarus, 2006). Lazarus tried in the draft to develop a tentative model that included these elements but we find that it is more meaningful to develop a theoretical perspective, which, in its philosophical and epistemological foundation, has an understanding of the individual and her mental processes as embedded in a physical and social environment at the outset. We need research that goes beyond the individual and conceptualizes appraisal and coping in a new manner and reconciles the alleged dichotomy between the individual and the context. Not in a manner where we insert a not further described "interaction" between the two, but in a manner where both positions are inherent in the philosophical and theoretical framework.

The extended mind in stress

A new perspective on stress as embedded in the environment calls for a new metaphysics of mind. This philosophical position is emerging today and is known as externalism and holds that the mind needs to be understood in light of what exists outside the subject and not just by intrinsic features such as physiological or cognitive processes. This position avoids the need to build conceptual bridges between mind and matter and reconciles the oppositions in the stress research that were described earlier.

Clark and Chalmers (1998) introduced externalism and the concept of the extended mind in opposition to the dominating internalist conceptions, and thereby tried to move beyond the standard Cartesian idea that cognition is something that happens "in the head". Their notion of the extended mind is a version of "active externalism", which states that significant parts of what constitutes mental functioning exist outside the skulls of individuals (there is also a version of externalism that refers to semantics, associated with Saul Kripke and Hilary Putnam (1973), which posits that "*meanings* are not in the head", because meanings are conceived as tied to referents in the world). Clark and Chalmers introduce *the parity principle*, which states that: "If, as we confront some task, a part of the world functions as a process which, *were it done in the head*, we would have no hesitation in recognizing as part of the cognitive process, then that part of the world *is* part of the cognitive process (Clark & Chalmers, 1998, p. 11). To illustrate this principle they use the now famous example of the rotation of a shape. It can be done in three ways: 1) by forming a mental image of the shape and mentally rotate is to see if it will fit. 2) By rotating the image on a computer screen by way of the computer's keyboard. 3) By using a neural implant, which is equivalent to the mechanisms/hardware in the computer, allowing people to rotate the images and even at a faster speed. The logic behind this example is that all three operations are psychological, i.e. cognitive, operations, and the difference between them lies solely in the *location* of the operation, so even if 2) and 3) are external versions of the cognitive process, they still count fully as cognitive operations for Clark and Chalmers.

Since Clark and Chalmers (1998), the view of the mind as not just *embodied*, but also *embedded* in a world and *extended* into this world has generated much interest and fascinating research programs (Robbins & Aydede, 2009). However, very few researchers have looked at mental health issues such as stress in this light. Our question then becomes: Is it possible to understand stress from an extended mind perspective? Can appraisal and coping, as psychological (indeed, cognitive) processes be understood as extending into the physical environment? This seems possible, for just as human beings may perform the rotation of a shape using different (internal and external) media, they can in similar ways mentally imagine the magnitude of assignments at work and appraise it as being threatening towards ones wellbeing. Or they can consider the magnitude of assignments at work by way of an electronic calendar on the computer screen and appraise it as being threatening towards ones wellbeing. And they can assess the magnitude of assignments at work by way of the

amount of physically placed assignments on the table and appraise it as being threatening towards ones wellbeing. One can even imagine an appraisal of the magnitude of assignments at work being extended into the physical environment through the architecture, for example. Imagine a work place with multi-person offices and with walls of glass. People can see how busy their colleagues are, the assignments on their tables and appraise their workplace as busy and threatening towards one's wellbeing.

Kono (2013) has recently pointed out that in spite of its promises, the extended mind thesis developed in the tradition of Clark and Chalmers nonetheless reflects an understanding of the surroundings as static, and the technologies inherent in the surroundings are only conceived as resources or constraints on human action. He points to the need for a theoretical framework that is more dynamic and which does not just treat the surroundings as a mere extension of the cognitive processes. Also Gallagher (2013) criticizes Clark and Chalmers for having an overly functionalistic understanding of cognitive processes because of their limited definition of cognition as simply encompassing belief, desire, and other propositional attitudes. From his embodied-embedded perspective, Gallagher argues that cognition is more than that, i.e., also constituted by enactive cognitive processes and activities such as problem solving, interpreting, judging etc. Gallagher elaborates on the theme of cognitive extension by extending the mind to include processes and *social* practices that occur within cultural institutions, which he calls 'mental institutions'. Mental institutions are defined as institutions that help us to accomplish certain cognitive processes or even constitute those processes and thereby function as an example of how cognition can be socially extended. As examples of mental institutions he refers to legal systems, educational systems and cultural institutions and claims that 'these socially established institutions sometimes constitute, sometimes facilitate and sometimes impede but in each case enable and shape our cognitive interactions with other people' (Gallagher, 2013, p.7). He defines a mental institution more precisely as an institution which:

"1) includes cognitive practices that are produced in specific times and places and 2) is activated in ways that extend our cognitive processes when we engage with them (that is, when we interact with or are coupled to these systems in the right way" (p. 6).

With this broad definition of mental institutions, we might include not only formalized institutions with explicit externalized rules and systems among them, but also specific subcultures or social practices inherent in organizations and institutions. Such social practices do not have to be embedded in systems of externalized rules, schemas etc. in a physical sense to function as socially extending, but also cultural and social signs in the environment mediated through language, discourses and distributed through the social interaction between individuals can be socially extending (Brinkmann, 2011).

We agree with the critics that the extended mind thesis needs further elaboration to include a more dynamical understanding of the interaction between the individual and the environment in the sense that the environment co-constructs the individual and the individual co-constructs the environment. The socially extended mind thesis has a more dynamical concept of the environment than cognitivist approaches, but seems to lack a concept of social practice that is detached from a formalized system and which entails a description of social interaction with opposition or conflict among a subject and its surroundings (Kono, 2013). What we need is a theoretical framework that encompasses both the physical and social embeddedness of an individual as well as a dynamical understanding of the interaction between the individual and the environment and a broader understanding of social practice.

We believe that a properly conceived cultural psychology may accomplish exactly that and exemplifies how mental life can be extended physically as well as socially through the mediated, distributed, and dialogical nature of the human mind. Valsiner is an exponent of an integrated version of cultural psychology as he tries to integrate a personal element with culture and thus understands culture as partly shared and partly personal. Since individuals contribute a personal element to culture, they 'co-construct' culture and culture is understood as a part of persons' psychological systems and plays a functional role within that system (Valsiner, 2007). Hence the individual and culture dynamically co-construct each other. Culture is seen, not as a variable or a cause of human conduct, but rather as a set of resources (semiotic as well as material) that human beings employ as mediators when living their lives together. The individual adds a personal element to culture by transforming the cultural messages in personally novel forms which then gets externalized to the surroundings.

From this point of view the meaning-making process and hence distinct appraisals and ways of coping are distributed (Hutchins, 1995; Scribner, 1984) between persons through the social use of semiotic signs and material tools. Dialogism, which is one direction within cultural psychology, focuses specifically on the interrelatedness of thinking and communication and exemplifies how dialogue is a case of social use of semiotic signs and material tools. This direction operates with a broadened concept of dialogue as not just between two people as we know it, but refers to 'any kind of human sense making, semiotic practice, action, interaction, thinking or communication'(Linell, 2009, p. 5). In the next sections, we look first at the role of artefacts and the physical embeddedness of stress, before moving on to analysing its social embeddedness. We will throughout the analysis invoke the concept of distributed appraisal and coping as a way of emphasizing the situated, dialogical, distributed and, indeed, collective nature of stress. Through the analysis of the physical and social embeddedness of stress, we take our point of departure in the earlier described stage theory of stress formulated by Lazarus. We argue that Lazarus' theory does not grasp the dynamicity of stress, but nonetheless can be used as an analytical tool to expound the social and physical embeddedness of the different stages of stress. Thus, in short, our goal is to 'socialize' and 'externalise' the Lazarusian theory.

Stress as physically embedded

During the first author's field study, she noticed the importance of the physical environment in shaping the appraisal and coping process and how this often seemed to be mediated through technology, physical materials, and physical surroundings such as the architecture within the organization. The following observation sequence illustrates the interaction with technology as mediating specific appraisals of the magnitude of work assignments:

'Paul looks at his electronic calendar on the computer screen and says shortly after: "I was just feeling really good as I looked at next week, but then I saw that it was 2012 I was looking at (and not 2011, which was the year the observations were conducted). When I look at next week I just get hit hard. I get all sweaty"'.

This example shows the switch in appraisal of the magnitude of the assignments based on his interaction with the electronic calendar on his computer. Building on Clark and Chalmers' parity principle introduced above, it is rather obvious that the computer calendar functions as extended

memory that organizes Paul's tasks sequentially in time, and it is interesting to notice how he describes how this technology has concrete implications for his physical state. The appraisal process is not just mediated through an individual's use of a material tool, but can also be distributed across members of a social group through the interaction with the tools. The organization in which the fieldwork was conducted had implemented lean[1] as a way of optimizing the production in the organization. One of the elements in the implementation of lean was that they allocated all the orders of the week to different days, using a blackboard, to avoid a piling up of orders. A green note was placed if an order was one week before deadline. One of the employees evaluated the implementation saying: 'Earlier I got stressed when I saw orders pile up on a single day. Now they are allocated on several days and I get calm and I feel like I get an overview, when I look at the blackboard'. Many of the employees highlighted the visual aspect of the implementation as central; that they visually could see the work of the week congregated on the blackboard gave them calmness. Here their appraisal of the magnitude of assignments seems to be mediated through the material tool or physical artefact – the blackboard – and distributed across the group of employees, given the social use of the artefact. The employee stated further: 'We actually talk less about busyness now. You can see it is shared and placed there (pointing at the blackboard).'

The example illustrates how physical artefacts in the environment through their distinctive nature can mediate and distribute distinctive appraisals of the work environment. Not only can the appraisals of the work environment be mediated through the physical artefacts, but the coping process can also be mediated through a physical artefact. In an interview one of the participants said:

".. I sit here and where I maybe ought to go over on the other side of the hall and joke or chitchat a bit. But I don't feel I have time to do any of that. And it affects me emotionally, that I don't have time. That's why I have that Havana club rum placed there. It is my own little token for once in a while to remember that I also must have time to do fun stuff".

Here the bottle of Havana Club rum functions as a sign. The bottle mediates a specific coping strategy, which in this case is to use humour as a way of distancing oneself from how busy the work is.

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[1] Lean means 'slim' or 'trim' and points to a set of principles aimed at increasing the productivity by efficiency improvements (Drew et al., 2004).

The critique of the extended mind thesis mentioned above, as reflecting an understanding of the surroundings as static and the technologies inherent in the surroundings as only resources or constraints of human action, does not apply to the theoretical framework applied here. As the cultural psychological perspective focuses on the dynamic co-constructing nature of the person-environment relation, it implies that through the transactions, the environment gets transformed, and so do the semiotic and material tools inherent in the surroundings.

Stress as socially embedded

In this section we will address the social embeddedness of stress through a focus on semiotic tools, which mediate the appraisal and coping process. Semiotic tools involve other people's experiences and interpretations of the world and allow communication between members of social groups through the exchange of signs. According to dialogism, when a human being constructs meaning in a relation with the world, it is always through a field of opposites. It is the opposition between the meaning and its opposites that is the basis for further change and explains how people are transformed through the social interaction. As Valsiner states, it is *not* possible to think of e.g. non-red (a negative concept) without having the notion of red (a positive concept) (Valsiner, 2007). The person is placed between what is known (e.g. non-red), which is the subjective meanings based on the person's life experiences up to now, and what is not yet known personally, which is a semi-open field of possible new meanings (e.g. red). The semi-open field of possible new meanings is socially suggested by others through their use of semiotic devices.

In relation to stress, the appraisal of a situation at work being 'I cannot manage this workload' is an example of a negative concept ('non-red'), based on the person's life experiences up to now and this appraisal is opposed to a semi-open field of possible new meanings, which is suggested by others such as: 'I can manage this workload'. An example from the field study exemplifies this more thoroughly: 'Sarah says loudly in the group of colleagues: "I get all stressed when I can't get the assignments finished on time". Susan replies: "It is just work. It is enzymes we are working with – not people and a question of life or death"'. Susan exemplifies the semi-open field of possible new meanings and uses a semiotic organizer implying *don't take work too seriously*. The way the dialogical self is conceived as social is that the dialogue with others (heterodialogue) becomes a part of the person's internal dialogue (autodialogue) in the sense that others occupy

positions in the multivoiced self, the so-called multiple I-positions. Each I-position creates a 'voice' which relates to the other 'voices' of other I-positions (Valsiner, 2007). Within this narratively structured self, dominance relations are established. In the case of Sarah, through an interpersonal dialogue, a particular direction of how to feel is suggested: That she should not feel stressed because work should not be taken too seriously. As a result, Susan's suggested value becomes a part of Sarah's internal dialogue as well as the other voices in the group. But what seems to be the case is that the voice of Susan becomes dominant and seems to form a *social representation* understood as a meaning complex that guide particular thought, feeling, and acting processes (Valsiner, 2003).

'The following days in the group I noticed that they often reminded each other that their work wasn't a matter of life and death and in a following group interview they stated that they were good at calming each other down by telling each other that it was "just work"' (extract from reflections on field notes).

From a cultural-psychological perspective, what happens in this process is that through communication and social action, the social representation gets distributed among the members of the group.This described process reflects the tension between the personal culture and the social world within which the person is embedded and describes how an appraisal process also is a social process as well as an intra-psychological process. Furthermore, the coping process also seems to be distributed among the members of the group. In a group interview, they stated how important it was for the newly appointed to learn to address the management, if they could not keep up with the pace of work:

'Interviewer: Is it something you pass on to the newly appointed?
Hugh: Yes, we are good at passing it on.
Simon: Then they just have to learn to comply with it.
Hugh: It is important, because if you do like Marian explained: "I can just do that, I can just squeeze it in tomorrow morning" etc., then it is going to be a mess, because it will not be removed from the system, and then the researchers think the next time: "Yes, it works fine, why can't you make it? You could the last time"'.
This, we find, is an example of how coping can be seen as socially distributed. On the basis of our argument so far, we believe that cognition and thereby the appraisal and coping process is dialogical

in nature and is semiotically mediated through the use of language in social interaction. In this sense we can also talk about the self being distributed or extended to others and to the social and cultural groups and mental institutions (Gallagher, 2013) to which one belongs. As Linell underlines, distributed cognition is typically understood as distributed along the extended loop of body-brain systems, artefacts, semiotic resources, and the material world, but to this list we should add "the other and her actions and utterances" (Linell, 2009, p. 146).

Rewriting appraisal and coping: Socializing Lazarus

In light of the theoretical and philosophical framework articulated here, we will now revisit the existing Lazarusian theory of appraisal and coping and rewrite it in light of our reflections on the distributed and mediated nature of these concepts. In the understanding of the individual vs. environment transaction, Lazarus sees the single individual as someone who acts, thinks, speaks, and explores the world, and, as Linell emphasizes in his critique of monologist theories, the ego is dominant and others in the social environment are around only as an 'environment' for the ego (Linell, 2009). Lazarus´ definition of stress thereby only entails an individual vs. environment encounter without emphasizing the social aspect of stress. A cultural psychological perspective, in contrast, emphasizes that persons are social beings interdependent with others. The other gets a central place in this theory accentuating that the other is a central part of the individuals' psychological constitution through the manifestation of different I-positions in the multivoiced self. One move in our attempt to "socialize Lazarus" consists of developing the ideas of appraisal and coping in a social direction. What Lazarus called primary appraisal (is something irrelevant, beneficial, or stressful?) already has an unacknowledged social dimension in the fact that that such appraisal is unavoidably relative to social norms. What it means that something is, say, beneficial or stressful, is, of course, relative to the individual's capabilities, but also to a kind of normativity that is sociocultural. Similarly in relation to secondary appraisal (if it is stressful – can I then cope?), for here there are social norms about what counts as *adequate* coping. Coping – like other psychological processes (Brinkmann, 2011) – is a normative process with the individual implicitly or explicitly comparing herself to others. One must know what it means to cope *well*, relative to social norms, in order to be able to assess whether one can cope. If so, it means that the social realm, so to speak, is built into the appraisal and coping process at its very foundation. Considering whether one can cope or not implies entering into dialogical relations with real or imagined others with whom one can compare and deliberate about what coping well means (compare the question:

'Can you play football?' If asked by Lionel Messi, one is likely to answer 'No, not really', but if asked by one's four year-old child, a correct answer might be 'Yes, I can'). Capabilities, including coping, are relative to social positionings, but this is ignored by the individualist framework developed by Lazarus.

Conclusions

In this article we have tentatively invoked the concept of *distributed appraisal* and *coping* as a way of emphasizing the situated, dialogical, distributed and, indeed, collective nature of stress. We argued that traditional approaches to stress and coping are linked to an individualistic epistemological and theoretical framework, and we have found it necessary to accentuate the different philosophical and metatheoretical foundations by introducing a new concept. We would like to emphasize that our talk of collective and distributed stress and coping are meant as tentative concepts, as our aim is to examine what kind of knowledge about coping we can gain by introducing this perspective.

The concept of distributed coping, we believe, can bring us new knowledge about the *landscape of appraisal and coping*. By using this landscape analogy we emphasize that concrete contexts invite employees to appraise the situations in a certain way and afford using certain coping strategies rather than others. This is not just a matter of isolated individuals, but related to the ecology, the landscape of material artefacts, and social relations. Just as the human cultivation of the landscape as such invites us to use certain paths and limit the use of others, so does our structuring of our working environment offer us certain coping strategies and make others less obvious. The structuring of our working environment both entails how we organize and shape our physical surroundings as well as how our human activities are organized such as the work organization, our communication and social interaction, and the discourses and cultural characteristics within the working environment. While the traditional concept of coping made us ask the question: 'How do you cope at work?' the concept of distributed coping will turn the question around to that of: 'Which coping strategies does the working environment offer you?'

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"Which coping strategies does the working environment offer you?" A field study of the distributed nature of stress and coping

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Abstract

This study explores work stress as a cultural phenomenon, distributed socially and materially, by introducing the metaphor of a *landscape* of appraisal and coping. By using this landscape analogy it is emphasized that concrete contexts invite employees to appraise the situations at work in a certain way and afford using certain coping strategies rather than others.

This study uses data based on a field study in one department of a multinational company and demonstrates how definitions of stress, appraisals of the working environment and coping strategies varies across professional groups. Furthermore, the study indicates that these different appraisal and coping practices are deeply embedded in the concrete context in the sense that the different aspects of the working environment such as the physical surroundings, the work organization, the social interactions and cultural characteristics each and combined invite the employees to engage in distinct appraisals and coping practices and limit the use of others.

By invoking the landscape metaphor, we aim to expand our understanding of stress as something more than a transaction between the individual and a specific stressful situation at work.

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Introduction

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The purpose of this paper is to explore empirically work stress as a cultural phenomenon, distributed socially and materially, by introducing the metaphor of a *landscape* of appraisal and coping. With a theoretical point of departure in cultural psychology (Valsiner, 2007; Valsiner & Van der Veer, 2000) and the theory of distributed cognition (Hutchins, 1995), the related concepts of *distributed appraisal and coping* are proposed as concepts that comprise the embeddedness of the individual in a specific socio-material context (Kirkegaard & Brinkmann, in press). The landscape metaphor is meant to indicate that the social use of the semiotic (language, communication) and material (artefacts, tools, physical surroundings) resources within the working environment *mediate* (to use a central term from cultural psychology) distinct ways of appraising and coping with stress and thereby bringing the ecology of the working environment to the fore. The concept emphasizes that different aspects of the working environment offer or invite the employees to engage in certain ways of appraising and coping with the working conditions and limit the use of others.

The distributed approach to appraisal and coping supplement the contemporary line of stress research, which stem from the work of Richard Lazarus. Lazarus introduced the concepts of appraisal and coping as a central part of the stress process, which he defined as a transactional process in which the magnitude of a threat is evaluated (appraised) in comparison with an appraisal of the individuals´ ability to cope with it (Lazarus & Folkman, 1984). Even though Lazarus emphasized the transactional nature of the stress process, the vast majority of the work following this theory has directed attention to the impact of individual factors on the appraisal and coping process such as for example exploring the influence of personality features on the coping process (Wainwright and Calnan, 2002) which has been termed dispositional coping (Carver & Connor-Smith, 2010). Folkman has also emphasized that phenomena such as personal control, agency and direct action are central to most theories of coping, reflecting an emphasis on the individual (Folkman & Moskowitz, 2004). The individualistic perspective on appraisal and coping has been criticized by several scientists for isolating the appraisal and coping process from the social context (Länsisalmi, Peiro & Kivimaki, 2000; Mickelson et al., 2001; Hobfoll, 2001). The only way the context has been given consideration within the coping research is through the concept of *situational coping* (Moos & Holahan, 2003; Pienaar, 2008), where emphasis is put on how a specific stressor influences the way individuals choose to cope. This approach has been criticized for reducing the context to a specific stressor and does not take other parts of the context into consideration (Carver & Connor-Smith, 2010). According to Hobfoll (2001) the traditional research

on appraisal and coping has interpreted appraisal and coping processes as ideographic and characteristic of the individual, and argues that we need to ask the questions *why* people make certain appraisals and cope in a certain way and the extent to which the appraisals and choice of coping strategies are culturally scripted.

New perspectives on stress and coping

Studies of how cultural characteristics within an organization influence the appraisal and coping process are limited. However, Länsisalmi *et al.* (2000) have conducted a qualitative study, which found that similar stressors across different divisions within an organization were shaped differently, and the respective coping strategies also differed from one subcultural context to another. The differences emerged due to different cultural narratives within the departmental subcultures, which produced specific ways of coping with the stressors. Other studies have looked further into professional cultures and have found that knowledge workers primarily used individual coping strategies in order to cope with the demands at work due to their professional culture (Buch & Andersen, 2013) and an Australian field study on hospice nurses concludes that they primarily used collective coping strategies due to a shared value system (McNamara et al., 1995). Together, these studies indicate that the appraisal and coping process cannot be separated from its socio-cultural context, and this perspective has not yet been adequately explored in psychological research (Wainwright & Calnan, 2002; Folkman & Moskowitz, 2004). But of interest is also how other parts of the organizational context influence the appraisal and coping process, and research within this area is even more limited. A study by Astwik & Melin (2013) stands out and demonstrates how the organization of work seems to influence the way individuals cope with situations they appraise as stressful in the sense that the organization of work enables certain ways of coping and limit the use of others. This study showed that, for example, the collective coping strategies were used more frequently when the work was organized in teams; they shared mutual responsibility for the working process and when communication and cooperation were of vital importance to their work. These studies point to different aspects of the work environment that shape specific ways of coping. To our knowledge no study has yet explored the variety of different aspects of the ecological surroundings which shape individuals appraisals and coping practices within an organizational context.

In order to explore how the appraisal and coping process is embedded in the working context, the metaphor of 'landscape' is proposed in this paper as a way to emphasize how the particular

context enables specific ways of appraising and coping with the working conditions. The metaphor is not used to explain or predict the findings, but merely as a way of describing the variety of elements in the environment which individually or combined invite individuals to think and act in a certain way. It forces a further look at the work environment as a whole and accentuate that both the material and discursive aspects of the surroundings are vital in the understanding of human thought and action.

The landscape of appraisal and coping

This metaphor is borrowed from the literature on workplace learning, where several scientists have operated with the landscape metaphor (Nielsen & Kvale, 2003; Noyes, 2004; Clandinin & Connelly, 1995), emphasizing the situatedness of learning and the resources and barriers for learning, which exist within the learning environment.

In this article, the landscape metaphor is used to focus on the interrelatedness of different aspects of the working environment and how they separately or together can function as resources and barriers for certain appraisal and coping strategies within the work place. The metaphor also reflects the idea that the pathways are *offered* to the employees and thereby that different aspects of the working environment *invite* the employees to engage in certain actions. This emphasis stresses that the individual can actively choose to follow the paths or not, hence the aspects of the working environment are not deterministic in any sense. The metaphor is also used to emphasize that just as much as the environment co-constructs the individual and her/his actions, the individual also co-constructs the environment. There is a mutuality in the sense that (to put it metaphorically) the landscape is cultivated by people, but at the same time offers people certain ways of thinking and acting.

Noyes (2004) has emphasized four constituent elements that define a landscape, which are *geology, climate, human impact* and *time*. *Geology* refers to the fact that natural landscapes have a constraining geological structure where, for example, physical paths have emerged that invite people to walk a certain way rather than forcing a constraining terrain upon people. Within a working environment, geology can refer to the architecture such as offices that are structured in a way that can constrain or enable specific ways of appraising and coping with the working conditions. It also refers to the structural components and material tools of a working environment such as the character of the work assignments, formalized rules, artefacts, etc.

Climate is the second aspect of the metaphor. It refers both to the macro and meso climate, which are relatively constant, and the micro climate which reflects a local, natural environment (Noyes, 2004). Climate refers in this article to the semiotic tools that form meaning complexes such as local discourses within different professions. In a broad sense, it is the ways that people talk about things locally. Macro and meso climate refer in this case to the public and organizational discourses, respectively.

Human impact refers to the human influence on the natural environment such as farming, urbanization, pollution etc., which can either benefit or have a detrimental effect on the landscape. In our case it will comprise the various initiatives and engagements within the organization such as the attitudes and concrete actions of employees as well as of the management. Examples could be the number of assignments provided by the management or the colleagues, the work organization, stress management courses, or leadership style.

The final element of the landscape metaphor is *time*. Obviously, time provides a framework in which change can take place. In this case it would refer to the temporal development in certain practices due to socio-historical transformations. In this article, however, we do not devote much attention to this fourth aspect, but concentrate on the first three. However, we will address time, but only regarding how the different professional cultures conceive time and the consequences it has for the appraisal and coping process. The above described aspects of the landscape will structure the analysis of different semiotic and material resources within the working environment, which mediate and distribute specific appraisals and coping strategies. By invoking the landscape metaphor, we aim to expand our understanding of stress as something more than a transaction between the individual and a specific stressful situation at work.

Methodology

Design of the study

The present study is designed as a longitudinal mixed methods study of multiple cases. A case study at two departments in a multinational company in Denmark in the years 2011-2012 was conducted by the first author, combining three measurement-based questionnaires (at the beginning of the study, after half a year, and after a year) combined with a social network analysis (Wassermann & Faust, 1994) and a field study. In this article, we limit ourselves to describing the qualitative results of one of the departments. The results from the other department will be published elsewhere as the

two departments had different types of work, were differently organized, comprised different professions and it would demand too much space than is possible in the present article to present an analysis of both departments.

Description of the department

The department was a research unit divided in two subdivisions, A and B, each conducting research but with different kinds of data material. The organization of work was characterized by its division into different research projects where scientists, lab technicians and technicians were allocated to different research projects with the scientists operating as project managers. Typically one scientist, 2-3 lab technicians and 1-2 technicians were allocated to a project. The scientists formulated study plans describing the lab tests that should be performed by the lab technicians and technicians. Prior to each research project, project meetings were held in order to discuss the research project. Regular project meetings took place during the project in order to discuss the progression of the project. The scientists worked alone as project managers within the department, but, as the research projects were part of larger projects within the organization, they also collaborated with project managers from other departments and attended project meetings with them. The lab technicians and technicians performed the laboratory tests.

In both divisions the scientists were primarily situated in private offices while the lab technicians and technicians were situated at multiperson offices.

Qualitative interviews

From the department in focus in this article 10 individual interviews and 6 group interviews were conducted. For the individual interviews the participants represented different divisions (A or B), different professional groups (scientists (5), lab technicians (3), technician (1) and one secretary), both sexes, different age groups (ranging from 22 to 60 years), employees with high/low stress (extracted from the questionnaire) and employees peripheral and central in the network (extracted from the social network analysis). The reason for these criteria was to obtain a large variation in the understanding of their working environment and ways to cope with it.

The 6 group interviews comprised 3 group interviews with scientists, 2 group interviews with lab technicians and 1 group interview with technicians covering the total of 34 participants.

Each individual interview lasted about one hour and the group interviews lasted about 1½ hours and they were semi-structured and thereby responsive to the information and cues provided by the

informants. The general questions formulated were based on theoretical presuppositions and themes, which had arisen during the fieldwork. The participants were encouraged to talk about their perceptions of their working conditions and their ways of coping with these. They were also encouraged to address their experiences within the organizational setting and related aspects of their relationship with their colleagues and management. The interviews took place at the work site, were digitally recorded and subsequently transcribed verbatim.

Field data collection

In order to understand everyday work life within the landscape of stress and coping, the employees´ practices and relations were examined through ethnographic description and participant observation. The researcher was a known participant-observer and tried to establish close relationships with key employees and other participants in the field. The data were collected 2-3 days a week from September, 2011 to February, 2012 by observations at the work site, attendance at staff meetings and at informal employee meetings, participation at lunch and coffee breaks and attendance at a two-day seminar with the department. Furthermore two office-seats were provided in two different multiperson offices, which, in combination with informal talks with the employees in the corridor and at the laboratories, helped establish credibility among the employees.

Observations in this context provided knowledge of "the working landscape" such as the physical and spatial organizations of the work site, the social interactions between the employees, the actual organizations of work and how these organizations enabled and disabled specific ways of appraising and coping with the environment. Furthermore it provided the chance of getting a background understanding of the persons and the practices they were part of in order to understand the meanings expressed in the individual and group interviews.

Data analysis

The data collection and data analysis were a combination of deductive and inductive strategies where the frame of reference (a combination of the individual-socioecological perspective and a critical psychological mindset) partly guided the focus of observations and interviews. At the same time the researcher was inspired by the method of grounded theory (Strauss & Corbin, 1997), and, by critically reflecting upon the frame of reference in combination with the ongoing data collection, the researcher tried to be open-minded towards new perspectives and interpretations. Furthermore, the ongoing readings of the "thick" descriptions (Geertz, 1973) through the field notes provided the

researcher with possible new perspectives on the field, which she could apply and examine during the data collection.

Through these analyses the distribution of the appraisal and coping process through the working characteristics, physical surroundings, social relations and cultural practices emerged as key aspects which were significant in order to understand the situatedness and distributive character of the appraisal and coping process. The final results from the analysis were validated and discussed through a public feedback session with the personnel of the department.

Results

In the following sections we will address the different appraisal and coping landscapes of the professional groups and describe how the different groups are offered distinct appraisals and coping strategies.

The appraisal and coping landscape of the scientists

A dual appraisal of busyness

One of the posters in the corridor was about safety procedures at work and caught my attention. The headline said: "We are a busy company, but that does not mean that you should forget about your safety" (extract from field notes).

This material artefact, the poster, formed part of the *geology* of the workplace and offered a conception of busyness as a normal part of work. The poster stated "*we are a busy company*" as a neutral statement and thereby mediated busyness as a natural part of work in the company. Furthermore the placement of the statement about busyness before the actual intention of the sentence – to remind people of their safety at work – emphasizes that the statement about busyness was important, and something one had to notice.

Another aspect of the working landscape was the *human impact* such as the work organization implemented by project managers or the management which also seemed to facilitate an understanding of busyness as an urgent and vital part of being at work. In an interview, one of the scientists described the pressure she felt from managers and project managers from other areas of the organization:

"We have had a huge focus (on projects) with a very short time limit. Then there is not really time to perform tests at different stages of the process or time to learn from it. It is kind of like: 'We have to have it all settled from the start and now we have to make the right decisions', but we don´t

really...I don´t feel it is possible to perform the tests necessary to make these decisions. It has to go fast and the expectations from others are that this project must not fail".

This way of organizing the work offered a distinct conception of time as '*something there is not enough of*'. One of the scientists explained it like this: "*I have to remind myself all the time. Things must simply not take time here*". This conception of time seemed to offer them a distinct appraisal of their working assignments as something they do not have enough time to perform. The conception of time and busyness was also expressed by the management. One of the managers described their attempts to engage the scientists in lowering their level of ambition in order to "*get the job done*". The managers also explained that busyness was a positive thing, since for them it was related to motivation and was necessary in order for the employees to do their utmost. This conception of time and busyness was reflected in the organization of the number of assignments by the management. According to the scientists, their allocations of working hours to the assignments were downsized, when new projects arrived in order to fit in extra assignments. This invited the scientists to appraise busyness as a natural and urgent part of their working conditions.

These specific pathways of specific appraisals of busyness made available through the *geology* and *human impact* contributed to a certain *climate* among the scientists. What was interesting was how the scientists transformed the cultural messages into distinct ways of appraising busyness, which was distributed among them. The *climate* was characterized by two opposing '*voices*' in the appraisal of busyness: busyness as being a *threat* to the scientists and busyness as being a *norm*, something the employees ought to strive for. A common theme in their conversations was the degree of busyness they experienced and how it made it difficult for them to perform their work in a proper manner, and they felt it was a threat to their wellbeing. Engaging in conversations with them about busyness, they often used their calendar to illustrate how little time they had to perform their job. But concurrently their articulation of busyness also reflected a normative idea, related to being a competent and important employee. One of the scientists described this dual process in an interview when he described the surprise he felt when realising through an analysis of his assignments that he was not as busy as he had thought:

> "*At one point I had made some scheduling of my work and discovered that I actually had time to do all I had imagined. I really felt unease. I thought: "No, this can't be right. I got all worried. I worried if I was being sidelined. The things I had got going, I had planned should take less time than I actually had in my calendar and that was quite unpleasant for me*".
> *Interviewer: How was it unpleasant – can you describe it further?*

Scientist: Well, it can't be right, I have to...I'm the technology specialist; I have to be well under way, right?

The quote reflects the duality in the conception of busyness. The scientists were used to think of time as something that was lacking, which seemed to offer a distinct appraisal of their working conditions as busy, even if this sometimes was not the case. Furthermore, when there was enough time, they got worried as it opposed their conception of being an important employee.

This normativity concerning time seemed to be distributed through the social interactions between the scientists and formed a *climate* among the scientists, which directed them to specific feelings, emotions and actions. One of the scientists stated: "*If you have to address stress, then it is not everyone in the corridor who is stressed. Because then we are really sick, but I think everybody feels that they are busy and nobody dare feel differently*". This quote reflects a common feeling among the scientists, that they ought to feel busy and it was reflected in both thoughts and actions. It seemed to guide them to feel disloyal toward their colleagues when they experienced periods of time when they were less busy and it seemed to guide the scientists toward engaging in specific actions that reflected that they were busy, such as mails sent late at night, meetings held during breaks or eating a quick lunch on the way from one meeting to another. One of the scientists describes the hectic atmosphere and she states: "*My experience is kind of like, it is so important that we do this, mails that rush back and forth and then we have to attend meetings, and it is also important that we fix this and that, but it just seems so..so hectic in some way*".

Through these actions the scientists seem to co-construct a busy work environment and offered colleagues a conception of busyness as a norm and something they ought to strive for.

Stress as an individual responsibility

The *human impact* such as the implementation of initiatives intended to prevent stress mediated a certain way of understanding why stress developed and how to cope with it. The stress management strategies implemented by the organization mediated an understanding of busyness as something the employees should accept and learn to cope with. As a scientist explains:" *The training course we have in stress management explains that it is the tasks piling up that generate stress, but the message is that the pile never vanishes; so to put it briefly: learn to live with it*".

The same logic was prevalent in relation to another element of the *human impact*, which in this case refers to the local management, which – during a discussion about busyness and stress – explained that they focused on how they could teach the employees to cope more efficiently. This

logic was in line with a statement from the top management saying that they would not employ any more at the moment, so the employees had to learn how to work more efficiently.

An interview with a scientist who had attended the stress management course explains, when talking about the course, how this position is offered to him during the course and how it has changed his way of understanding stress: "*I thought maybe stress was developed if too many assignments were delegated to me, then I got stressed, period. And so straight forward I do not think it is today. I understand stress more as an individual thing, and then of course with some external factors, but just as much also with one's own personality that play together*".

This quote reflects that the *human impact*, such as the organizational initiative of preventing stress, offered the employee an individualistic understanding of stress, and later in the interview he describes the variety of individualistic coping strategies, he was offered at the course. These strategies covered different ways the employee could enhance his own resources in order to be able to cope with the rising demands at work, such as relaxation techniques, exercise and yoga, and it became a central part of his own coping repertoire.

The individualized way of understanding and coping with stress was also present among other scientists in their understanding of the cause of stress. In interviews with scientists, who had been on sick leave due to stress, they focused on their own coping strategies instead of pointing to the working environment as an explanation of why they had developed stress. To the question 'why had they developed stress', one of them answered: "*I didn't express it clearly enough to my boss, I thought afterwards. That now I couldn't take it anymore. I probably told them that it was too much, but that everything would be alright*".
It was very characteristic of their reflections that their focus was on how they could have coped more efficiently. At the same time the development of stress was also understood in relation to the individuals´ vulnerability. In an interview with one of the scientists, he focused on his own vulnerability in relation to his development of stress*:" I was shocked because I consider myself as fairly robust and a fairly strong person and things like that, and then to break down like that…it was quite a shocking experience for me; to see how vulnerable I was*".

The quote illustrates the attention he gives to his own vulnerability instead of focusing on the context within which his development of stress has occurred. This way of understanding stress also reflects the *macroclimate* such as the public stress discourse in society. Donnelly & Long (2003) have identified the individualistic stress discourse as the dominating discourse within western society and characterize it as focusing on the individual's own responsibility for developing stress

and coping with it. These elements are present within the local discourses of the scientists as well as within the organization and thereby reflect both the *meso- and microclimate*.

Coping as an individual responsibility

As previously argued, the working landscape mediated and distributed specific ways of appraising the working conditions and also invited the scientists to use certain strategies and limit the use of others. The duality of the appraisal process where the scientists varied between two opposing 'voices' (busyness as a threat vs. busyness as a norm), was also present in their choice of coping strategy. The scientists had tried to a certain extent to alter their working conditions by addressing the management individually, but they did not experience that the management accommodated their concerns. Over time they increasingly engaged in adjusting to the working condition busyness.

The adjustment strategy

A common strategy used by the scientists was trying in different ways to adjust to the workload by enhancing their work pace and time spent on work, enhancing their work efficiency, enhancing their own resources and reducing the quality of their work. The *geology* of the workplace and the human impact seemed in conjunction to invite the scientists to use these individualistic ways of coping with the work load. Their placement in private offices combined with an individualistic structuring of their work, as they worked alone as project managers, invited the scientists to use more individualistic coping strategies. Furthermore, the tools required for performing their job were not situated at the workplace, which enabled the scientists to enhance the time spent on work at home during the evenings and weekends.

The chosen individualistic strategies were also derived from the fact that alternative strategies seemed less accessible to them as will be outlined below.

A limited access to the alteration strategy

The *climate* among the scientists, as well as within the organization as a whole, seemed to make it difficult for the scientists to try to alter their working conditions by addressing the manager of their department. One of the scientists said:" *It (the way the employees and the management talk about busyness) contributes to an atmosphere which makes it even harder to address the management and put one's foot down*". The scientist refers to the normativity inherent in their appraisal of busyness previously described. When busyness was linked to being a competent and important employee, it

seemed to limit the access to an alteration strategy such as addressing the management. This link between busyness and a competent employee seems to be reflected in another interview where a scientist explains that pride is the reason why he did not address the management:

> Interviewer: You haven't tried to go to the management and put your foot down?
>
> Scientist: No not so definitely. No I haven't.
>
> Interviewer: What is the reason for that, you think?
>
> Scientist: Pride, I think.

Other scientists mentioned the fear of colleagues performing better on the assignment if it was passed further on to them, and common for their reflections was that it seemed important for them to keep an appearance of being able to cope with busyness. In an interview with one of the scientists, where we talked about time and allocations, he stated: *But whereas this narrative of, that we are very busy, but we can manoeuvre in it, it is far more "popular" and something you would like to go around and tell. It would be a he-man story".*

But the *geology* of the work place also limited the access to addressing the management as a way to reduce the work load. Several of the scientists explained that due to their specialized assignments, it would enhance the work load if they should pass assignments on to the manager, because they had to spend a lot of time explaining the content of the assignments in order for the manager to pass it further on.

A limited access to professional and emotional support from colleagues

The *geology*, and in this case the characteristics of the working assignments, seem to limit the access to professional support from colleagues. During observations and interviews it became obvious that the scientists rarely went to seek professional help from their colleagues compared to the lab technicians and technicians. The specialized knowledge about their subject field made the scientists hesitate to use their colleagues for professional help. When asked about these observations, one of the scientists said: "*We are so specialized within each our working area, so it will take a lot of time and effort to seek professional help from each other.*" This illustrates that due to the characteristics of the working assignments, seeking professional help from each other did not make much sense to the scientists as it would enhance the work load.

But the observations revealed that besides not using each other for professional help, they did not use each other for emotional support either. Confronted with the observation one of the scientists said: "*And that is perhaps a weakness among us scientists that we handle our things by*

ourselves and asking someone else for help is not something we do". The *geology* and thereby the placement in private offices, combined with the human impact such as a high work load and an individualized working organization, jointly invited the scientists to not engage in strategies aiming at getting emotional support. One of the scientists said "*I sit here and where I maybe ought to go over on the other side of the hall and joke or chitchat a bit. But I don't feel I have time to do any of that. And it affects me emotionally, that I don't have time*". This quote does not relate to emotional support, but it does relate to the limited access the scientists feel they have in relation to addressing their colleagues due to the physical and working characteristics of the work place.

When talking further about emotional support it was characteristic for the scientists to accentuate that emotional support did not help as such as it did not take away the work pressure.

> Interviewer: What about support like when you talk to someone without nescessarily try to help the person professionally but just listen to what they say?:
> Scientist: Oh in that way
> Interviewer: Yes in that way
> Scientist: (pause)… I think…I don't know. I dont think we (the scientists) are good at that. Whether it is due to how we are like as individuals or it is due to the characteristics of our group, I don't know. I think it is influenced by us as persons, but when I am so busy it would not help me very much that you came and listened to my frustrations over the things I didn´t have time to do. Because my focus would be on the time I needed to make these things.

This quote reflects that the human impact such as work pressure seem to affect their way of evaluating emotional support because the lack of time became their frame of reference when addressing coping strategies.

The appraisal and coping landscape of the lab technicians and technicians

Busyness as a shared enemy

The lab technicians and technicians were introduced to a different landscape than the scientists in several ways. The *geology* of the working environment was for the lab technicians and technicians characterized by the location at multi-person offices or in laboratories, which invited them to

engage in social interactions and communications about their common working conditions. The *human impact* was also different. They had an equal organization of work as they performed lab tests (though with different material) for the scientists, and this placement in the hierarchical organization of work together with the physical placement seemed to strengthen the commitment in the group and thereby contributed to form a distinct *climate*. As one of the lab technicians explained: "*Maybe it's because we feel more united as a group (as opposed to the scientists). The work we have and such...like the man on the floor. You feel you have something there…*"

The *climate* was characterized by a strong group commitment and a strong concern for each other. The strong group commitment contributed to an ingroup/outgroup distinction (Valsiner, 2007) between the group and the management, as well as in relation to the scientists. They often defined themselves as a group in opposition to the management and had created an oppositional 'voice' toward the offered appraisal of busyness by the organization toward the dominating individualistic stress discourse within the organization. Busyness was articulated as a threat toward their well-being, as something they could not accept, and that they had to collectively fight against. Furthermore they saw it as the management's and the scientists' responsibility to structure the working conditions reasonably.

In a group interview with the lab technicians, they had a dialogue about their working relationship and how it was affected by their experience of a high workload. In a reflection upon that, one of the lab technicians stated:

> *Lab technician 1:"You have to watch out that it does not get humanly related, when it is about something else. It is about a modern company that seeks to optimize and exploit the manpower more and more, but there is a pain threshold. We are not machines, you know.*

When they appraised busyness as exceeding their resources, and thereby appraised busyness as a threat to their well-being, they often used the term 'we' such as, for example, in a group interview one of the lab technicians stated: "*We* get stressed due to the busyness". Furthermore, when they talked about how to cope with the busyness, they also often used 'we': "*We* are some very nice girls who listen, but nevertheless, *we* have to hold on and not give up" or " *we* have to hold on to ourselves and not be embarrassed that *we* cannot keep up with the work pace".

Their appraisal was also collective in the sense that they appraised busyness as a threat to the well-being of their colleagues and not only to themselves individually.

One of the lab technicians stated:

"When I can feel my colleagues get sad (due to the busyness), then I think about it. Then I enter into a problem-mode – how can I solve this – I can't usually, but then we can talk about it and illuminate how things are".

Just as the *climate* seemed to mediate an appraisal of busyness as a threat toward their well-being, it also mediated the content of the threat. When they talked about stress what came first to mind was that they were affected by their colleagues' state of mind more than busyness in itself. "*You get affected by your colleagues' state of mind. You do that because you spend so many hours at your work and it is not ok. It is not ok that you get sad by doing your job. Everyone can manage it a shorter period of time. It is when it has lasted a longer period of time it gets difficult, but when I can feel that my colleagues get sad then I get sad*".

Another element which also contributes to the appraisal of busyness as a threat was the *geology* of the workplace such as the multi-person offices where they visually could see each other most of the time and were engaged in frequent interactions with each other. Thereby they constantly had a sense of each other's state of mind.

The previously mentioned appraisal of time as 'something that there was not enough of' which was experienced by the scientists, was also characteristic for the lab technicians. However, a reverse appraisal of time was found for the technicians due to the *geology*; in this case geology refers to the characteristics of their work tasks and interaction with machines in order to perform their job. Their work was characterized by performing lab tests such as granulating in larger machines and each test was scheduled to last a fixed amount of time. The interaction with the machines seemed to invite the technicians to appraise time as something that was fixed and that they should not comply to busyness, which they passed on to each other. In an interview talking about how they passed that on, one of them explained: "*Remember the three ts: things take time. Granulation takes a certain amount of time and a boiling takes a certain amount of time. You can scream at the boiler, but it is not faster for that reason. Each thing takes a certain amount of time, and you can't change that*".
This conception of time was reflected in their conception of busyness as they appraised busyness as something that was not their responsibility and as something they could not do anything about.

Stress as a contextual phenomenon
The lab technicians had a distinct contextual understanding of why stress developed, and the working conditions were conceived as the primary cause in relation to the development of stress. In

a conversation about their experience of the work load, they focused on the working conditions and not on their own coping strategies, which an interview with one of the lab technicians illustrates:

> *Lab technician: Why stress develops? Well stress just develops when you do not have time to do the things you want to do. The things you had imagined you had time to do. (…) And then seek to inform the people who delegate the work assignments that it cannot be done and that you have a realistic picture of how long time things take. And if the people who delegate the assignments think that you ought to do more then you just bring them to the laboratory to help and then they can see how busy it is, right?"*

This way of understanding how stress develops mediated distinct collective ways of coping with stressful situations. Instead of focusing on their own coping strategies, they focused on how to identify those who were responsible for their situation and then how collectively to approach these persons in order to alter the circumstances.

Coping as a collective strategy

Alteration as an offered coping strategy

The attempt to alter the working conditions as a coping strategy characterized the group of lab technicians. If they were discontented with the work load, they tried to alter the working conditions individually as well as collectively. Their distinct *climate* seemed to invite the lab technicians and technicians to use the alteration strategy more frequently than the scientists did. Their strong group commitment and joint conversations about their working conditions made them more confident that it was a problem that had to be addressed. Furthermore, their ingroup/outgroup distinction between themselves and the management entailed that recognition from the group was more important to them than recognition from the management, something which made it less problematic for them to address the management. The alteration strategy therefore seemed natural for the lab technicians to engage in. In a group interview one of the lab technicians said:

> *"I think we have all been to the management individually to express our frustrations and have tried to talk to our manager about how we can reduce the workload. Interviewer: Can you describe the managers' reaction? Lab technician: He says that he hears what you're saying, but that things are as they are".*

But they also engaged collectively in addressing the management. The attempt to alter the working conditions included collective meetings with the management arranged by the group of lab technicians and meetings within the group of lab technicians and technicians. The aim of these

meetings was to alter the management decisions in order to reduce the workload. The lab technicians had initiated meetings every 14th day with the management where they had listed their assignments combined with their evaluation of the working hours each assignment required. They hoped that it could provide a realistic evaluation of the magnitude of assignments in relation to the hours they were employed and consequently that the manager could see the urgency of getting their workload reduced. The group of technicians did not initiate regular meetings with the management, but explained in a group interview that they had a fixed coping repertoire within the group, which was addressing the management if the work load was experienced too high, and they passed that coping strategy on to newcomers.

> *Interviewer: Is it something you pass on to the newly appointed?*
>
> *Technician 1: Yes, we are good at passing it on.*
>
> *Technician 2: Then they just have to learn to comply with it.*
>
> *Technician 1: It is important, because if you do like Marian explained: "I can just do that, I can just squeeze it in tomorrow morning" etc., then it is going to be a mess, because it will not be removed from the system, and then the scientists think the next time: "Yes, it works fine, why can't you make it? You could the last time"'.*

The two groups of lab technicians and technicians also engaged in joint actions in order to alter the working conditions. The meetings within the group of lab technicians and technicians when experiencing a common threat from the management was observed by the first author on one occasion and was characterized by a discussion of the problem, an appraisal of the problem collectively as being a threat towards their well-being, a discussion of how to handle the problem, the making of a plan and delegation of assignments to each other in order to effectuate that plan.

As the above quote expressed, the lab technicians and technicians did not experience that the management accommodated their concerns about the work load, which seemed to strengthen their ingroup/outgroup distinction. At the same time, the lack of accommodation from the management seem to enhance the ongoing attempts to change the conditions, and became an increasing stressful experience for the lab technicians as they could not change the conditions. They seemed fixated in the use of the alteration strategy and the *climate* within the group seemed to enhance this fixation. With expressions like: "*It is a battle and we have to fight it*" and others like it and their ongoing communication around the subject, had the implication that they strengthened the group focus on the alteration strategy. This "battle" focus seemed at times to be a stressor in itself and the lab technicians varied between frustration and resignation which a group interview reflect:

" How on earth do we move on? You can´t talk your way out of it. It shows that something has to be done. When you look at the picture you think: 'You ought to be able to do something'. Do you see a way out of it?"

One of the scientists explained the darker sides of the collective spirit among the lab technicians by focusing on how negative stories tended to emerge and progress within the group of lab technicians:

"I think there has been some cases (with the management) which have a strong presence in peoples consciousness and they kind of like sum up, so negative stories easily emerge and tend to have a strong presence. Focus then is on the negative things which is what you keep looking for and then it gets easier to find".

The overemphasis on the alteration strategy combined with negative storytelling seemed to reflect the darker side of the collective focus which seemed to emerge due to the fact that they were not able to change the working conditions.

Professional and emotional support as an offered coping strategy

Unlike the scientists, the lab technicians and technicians often helped each other with the working assignments within their respective groups or across the groups. One of the lab technicians explained:" *We help each other and we say that people have to tell us if they need help – then we jump in and help whenever we can. We try to do that a lot"*.

Another lab technician adds in a group interview:

"The lab technicians and technicians do each other good. A large part of them (the technicians) come and say: can you help me with this? And then another day they (the technicians) help you. We advance some things. We know that we shall help each other. We need each other".

Due to the *geology* of the landscape, and in this case the characteristics of the working assignments, seeking professional help from each other was much easier for the lab technicians and technicians compared to the scientists. The lab technicians for example made the same laboratory tests as each other and could thereby easily help each other with the tests.

Another characteristic of the lab technicians and technicians was that they also offered emotional support to each other.

A lab technician explains: "*We talk about it. We often go to each other and say:' this is too much right now' and it has strengthened our unity. It is nice that we have this confidentiality and when we are frustrated by our working conditions we start by saying it to our colleagues. Then you kind of have started*".

The *climate* in the group of lab technicians made it easier for them to address each other because it was a normal part of their communication and interaction. The *geology* and in this case the office landscape furthermore made the offering of emotional support easier as they were placed in multi-person offices and thereby had easier access to an ongoing communication with each other.

At the same time they found it increasingly difficult to help each other due to the experienced heavy work load. So while the *geology* invited the lab technicians to cope by helping each other due to the characteristics of the working assignments, the *human impact*, such as the delegation of the number of assignments, created barriers for being able to use this strategy continuously.

Results and discussion

The aim of this study was to explore the contextual embeddedness of stress and thereby the distributed and situated nature of the appraisal and coping process by introducing the metaphor of the landscape of appraisal and coping. The title question was: Which coping strategies does the work environment offer you? The question was raised to explore what kind of knowledge you can gain if you conceive coping as a distributed phenomenon and thereby not just something that occur in the head of individuals.

The results indicate that the professional groups in the department were offered different appraisal and coping practices because the social, cultural, physical and work organizational characteristics of the work environment were different for the groups. As a result of the different access to different appraisals and coping strategies the professional groups differed in appraisal and coping practices.

The landscape metaphor provided an elaboration of the working environment, while at the same time emphasizing that individuals are invited to use certain paths only and thereby that the environment do not determine certain behaviours.

The group differences were marked in the sense that busyness took different forms in the described practices, the employees' understanding of stress differed, and they engaged in different coping strategies in order to cope with a rising work load. The scientists used primarily individual strategies aimed at adjusting to the working conditions, while the lab technicians and technicians

collectively tried to alter the working conditions. These differences in appraisal and coping seem to be generated by the fact that the groups were offered different appraisals and coping strategies by the physical surroundings, the work organization and characteristics, the existing social relations and the organizational culture and subculture within the groups.

The scientists were primarily placed in private offices, their work was individually organized, their work tasks were specialized and their cultural practice was characterized by reproducing the cultural messages on busyness through their actions.

The lab technicians and technicians were primarily placed in multiperson offices and laboratories, their work was organized in a way where they to a higher degree than the scientists collaborated, their work tasks were similar and their cultural practices were characterized by opposing the cultural messages on busyness.

Instead of taking a point of departure within the individual in trying to understand specific coping behaviour, the results of this study suggest looking into the availability of coping strategies within the working environment and thereby bringing the ecology of the working environment to the fore in understanding coping practices. The present results thereby offer a shift in focus away from the individuals´ mental and internal coping process to the context in which the coping process takes place and serves as a preliminary step toward a more coherent understanding of the stress phenomenon at work.

The results add a new element to the current debate within the coping literature of whether coping is dispositional or situational (Moos & Holahan, 2003). The group differences found in this study supplement the conception that coping is either dispositional or situational. The situational perspective takes a point of departure in the type of stressor which can predict a specific coping practice. This line of thought entails a focus on a specific single factor in a specific situation and a linear causal pathway to the chosen coping strategy more than processes over time. What this study emphasizes is that contextual factors other than particular risk factors or stressors influence the appraisal and coping process. The interaction between different contextual elements within the working environment frames the appraisals and coping strategies within the specific context and invites the employees in it to appraise and cope in a certain way and the actions of the employees constantly reproduce this environment. The focus on the different aspects within the working environment that invite and limit distinct coping behaviours thereby supplements the current debate as it emphasises that also other contextual factors than the specific stressor shape the coping

behaviour. We believe that the landscape metaphor and its elements provide a useful perspective on the whole range of contextual factors.

The practical implications of this study point to the importance of having access to a variety of coping strategies within the working environment. A limited access to relevant coping strategies can imply that the employees are fixated in strategies that do not help alleviate the stressful condition. The two groups each seem fixated in individual and collective coping strategies, which did not always contribute to alleviating their feeling of distress The conclusion is, therefore, not that either individual or collective coping strategies are good or bad as such, but that the employees need to have a flexible access to a variety of strategies. The prevalent perspective on stress and coping in the literature does not take into account the variety of elements in the environment that do not function as risk factors. The interest in risk factors within the work place thereby needs to be supplemented with an interest in the ecological surroundings.

Limitations

The participating department comprises 50 participants and 16 interviews were conducted, which reflect a rather small sample size. Furthermore, all respondents were from the same organization and within the same industry, so the cases represent unique examples of employees in their everyday work practices. A common objection toward case studies with only one or two cases is the lack of generalizability (Kvale & Brinkmann, 2008; Flyvbjerg, 2006); an objection which also regards this study. However, as this study has used a triangulation of methods comprising observation, individual and group interviews, it strengthens the conclusions due to the ongoing validation process inherent in the data collection and analysis. Furthermore, this study put forward a deeper understanding of the contextual practices inherent in the stress process and thereby broadens the theoretical scope of stress; hence an analytical and theoretical generalization (Kvale & Brinkmann, 2008) can be made.

However, this study is just a preliminary step toward the exploration of the relationship between the semiotic and material culture within working organizations and future studies could benefit from studying cases with an archaeological sensibility and understanding of the agency of material culture. Furthermore, they could explore more in depth how different forms of relatedness between discursive and material elements in the environment enter into our interpretations of stress as well as our working conditions and coping practices.

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